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THE DUCKS OF PLYMOUTH COUNTY, MASSACHUSETTS.

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WHATEVER may be the claims of other sections of New England, it is certain that Plymouth County, Mass., especially the southern half, is notably a favorite resort of the Ducks. Every one of the twenty-eight species attributed to New England has been noted within the last ten years.

The topographical conditions are specially favorable for their occurrence and capture. The county has an extended and varied coast-line, with good feeding grounds. Of the latter there are two specially notable,—Plymouth Bay on the east, and Buzzard's Bay on the south. Another minor feeding ground is in the southwest corner of Cape Cod Bay, where the townships of Plymouth and Bourne adjoin,—the South Plymouth resort. A few miles south of Plymouth Bay is a projection called Manomet Point, one of the finest spots for sea shooting on the whole New England coast. Vast hordes of ducks go by here in the autumn into Cape Cod Bay. The number is less in the spring, as the greater body, flying north, is deflected seaward by the convex side of Cape Cod, while in the flight south they suddenly find themselves hemmed in by the up-curving arm of the Cape.

Inquiry is often made as to the further course of those fowl that fly into this great bay from the north. I am unable at present to say how many of them follow the curve of the Cape back around Provincetown. But I know that a great many do *not* go around, but fly over the peninsula, notably at the narrows adjoining Buzzard's Bay, at Barnstable, and at Orleans into Chatham Bay. On clear days and moonlight nights they fly high, but it is otherwise in thick or stormy weather, when they are shot in transit from elevated spots, such as 'Shoot-flying Hill,' West Barnstable. In the spring flight many that do not go around the Cape enter Buzzard's Bay, and, crossing at the 'Narrows,' fly up the Plymouth shore past Manomet.

On the coast the autumn flight is observed to begin the last of August with the Scoters, the tide of migration increasing gradually to its height, which is from about October 20 to early November. By the last of the month the migration is about over. In the spring the return movement is noted by the last of March, the period of greatest abundance being early April, perhaps from the 5th to the 10th. The several Scoters are the last of the Fuligininæ, lingering into May, sometimes collecting in great 'beds' to feed protractedly. Such a case was noted off Plymouth Harbor, April and May, 1894, when several thousand Scoters were estimated to be feeding on those flats.

Some account must now be given of the fresh water resorts. Southern Plymouth County is well termed the 'Lake Region of Massachusetts.' It is full of ponds, and is drained mainly by the Taunton River and its tributaries. The largest bodies of fresh water in the State are found here. Assowampsett Pond, the greatest in area, is a broad oval sheet, shallow, three miles long by two across. The next is Long Pond, close by, four miles long by over a mile in width. These and a number of others comprise a distinct group, known as the Lakeville Ponds. Eastward, in the southern part of old Plymouth town, a region of veritable wilderness, is another large group. Then, north and west, in Kingston, Halifax and vicinity, is still another group, the largest being Monponsett Pond and Silver Lake, the latter a noted spot for shooting geese. Many of the Fuligininæ daily enter these ponds lying near the coast to obtain fresh water and to feed.

Last, but not least, apart from others of considerable size, in the town of Bridgewater, is Nippenickett Pond, about two miles long, shallow, irregular, excellent feeding ground, and in every way adapted to the purposes of the 'stand gunner.' One stand secured over 200 ducks in the autumn of 1895. Ducks of at least twenty species are taken here nearly every year. I am much indebted to Mr. J. E. Bassett, who owns the above stand, a careful and intelligent observer of the water-fowl, for statistics of the occurrence of the various ducks in this pond, and for many fine specimens in the flesh. From the abundance of ducks in this pond, it might be surmised that it is located in some special highway of migration, perhaps from Boston to Narragansett Bays, it being nearly in the direct line.

The influx of ducks in these ponds begins about the middle of September with the Dusky Duck, and continues until the ice forms, the whole of October being a period especially fruitful. Many of the Fuligulinæ frequent the ponds during the last half of the season. Large numbers of ducks pass over on clear nights, often without stopping. On clear, cold days, with heavy northwest wind, especially in October, great numbers of the various Anatinae keep passing in large flocks.

In the spring flight very little is seen of the Anatinae. They evidently pass much more quickly than in autumn, as well as more inland. Moreover, as they are not then decoyed and shot, to any extent, it is next to impossible to observe them, flying as they do by night, and being so exceedingly shy.

A brief résumé of the different species and their occurrence will now be in order.

Of all the Anatinae, the Dusky Duck (*Anas obscura*) is by far the most abundant. A number linger in winter on the coast. Many of these late birds, probably a northern race, are very large and finely plumaged, with deep red tarsi, and are popularly regarded as a distinct species. Quite a few remain to breed in the meadows and swamps adjoining the Taunton River and some of the ponds.

The Wood Duck (*Aix sponsa*) is, of course, very abundant, frequenting the streams and smaller ponds, breeding in suitable localities.

Probably the Pintail (*Dafila acuta*) is next in abundance among the Anatinae. It is quite a common bird in autumn in the ponds, coming often in flocks as large as forty. Most are in immature plumage. The main flight is from the last of September to the middle of October.

Aside from the Blue-winged Teal, I would rank the Mallard (*Anas boschas*) next in comparative abundance. It is a much commoner bird in this section than is generally known. It regularly visits all the larger ponds, mostly in small bunches, or stragglers with flocks of the Dusky Duck, yet not infrequently in good sized flocks. The only exact figures of its capture to which I can refer are from Mr. Bassett, at Nippenickett. This year the stand took eight, singles or from small bunches, seeing a number more that escaped, and also a flock of twelve that would not decoy, but were accurately observed through field glasses. In 1894 nine were taken, and in the autumn of 1893 about twenty, when they were unusually abundant. Mr. C. C. Wood, the Superintendent of the Plymouth Rock Trout Company, a taxidermist and collector, who has had long experience with the ducks in the Plymouth ponds, regards the Mallard as "a common straggler," occurring every fall. In general, it is a regular and by no means uncommon species.

The American Widgeon (*Mareca americana*) occurs much as does the Mallard, though perhaps rather less commonly. For the past three autumns it has been much scarcer than usual, yet even then it appeared in small numbers in most of the ponds. Mr. Bassett has not infrequently shot into flocks of as many as twenty. Mr. Wood has, until within three years, found single ones in flocks of the Dusky Duck. He has noted no large flocks in the Plymouth ponds, such as are seen in Nippenickett.

Both species of Teal occur, mostly early in the fall, yet sometimes lingering late. In the past season I saw a Green-wing on Nov. 26. The Blue-wing is much the commoner of the two, though rapidly becoming scarce. Not many years ago large flocks were common, whereas now it occurs mostly singly or in small bunches. The Green-wing is quite scarce. Some of the stands have not taken them, until the past autumn, for many years. There was seemingly an irruption of this species in the fall of 1895. At Nippenickett they were taken five or six times,

and seen several times more. No large flocks occurred there. At Assowompsett a considerable flock was shot into, and a number secured.

The Shoveller (*Spatula clypeata*) is now one of our rarer ducks, and becoming more and more so. I have not been able to find it myself. Mr. Bassett has not taken it in Nippenickett in his twenty years' experience. Mr. Wood saw one captured in the fall, about 1881, taken from a flock of tame ducks, at the outlet of Billington Sea, Plymouth. He also knows of six or eight being shot at Great South Pond about five years ago. Dr. W. C. Woodward, of Middleboro, has taken the species occasionally in some of the Kingston ponds, until within ten years, since which he has not seen one.

The Gadwall (*Anas strepera*) is liable to be confounded with the Widgeon and Pintail. As I have not met with it myself, it is hard to find undoubted instances of its occurrence. Mr. Wood is the only one from whom I have obtained reliable information regarding it. He says that Gadwalls are "taken as stragglers with flocks of Black Duck during the fall migration at Billington Sea, rarely the past five years."

Passing now to the Fuliginæ, and not attempting any classification as to abundance, the Red-head (*Aythya americana*) may first be mentioned. It is found both on the coast and in the ponds. In numbers it is somewhat intermittent from year to year, though it occurs regularly each fall. From two to a dozen are said by one of the U. S. L. S. S. men to be taken off Manomet Point each season. Several at least are annually taken in Nippenickett, some years quite a number. In 1893 it was particularly numerous. On Oct. 10, eleven were secured from a flock of 32. I secured a specimen, adult male, at Chatham, Jan. 1, 1885, which shows that they sometimes winter. Mr. Wood has found them scarcer in the Plymouth ponds than I have a little further inland.

The only undoubted instance of the occurrence of the Canvas-back (*Aythya vallisneria*) which comes to my knowledge is reported by Mr. Wood. He has had in his possession one specimen, a lone bird that was decoyed and shot at Billington Sea, about 1885, in the autumn. A few other instances are reported, but cannot be proven beyond doubt.

The Scaup Ducks occur both on the coast and in the ponds. *A. marila* is much more abundant than *A. affinis*, and is one of the most common species in the larger ponds, next so, perhaps, to *Anas obscura*. Each autumn, from the middle of October until the ice forms, there is in Assowompsett a great gathering of these ducks, *marila* predominating, very shy, flying from one pond to the other, when pursued.

The closely related Ring-neck Duck (*A. collaris*) occurs but rarely. I noted two this fall, a pair, Nov. 23, which swam in to the decoys at the Nippenickett stand and were secured. Mr. Wood has noted several captures in the last ten years.

The Golden-eye (*Glaucionetta clangula americana*) is common on the coast and in the ponds in fall and winter. Its miniature, the Buffle-head (*Charitonetta albeola*), though not so common, is often seen in autumn both on salt and fresh water, and in the winter is quite frequent on the coast. In October and November they appear in the ponds in small flocks or singly, and are often surprisingly tame.

A single instance of the capture of Barrow's Golden-eye (*C. islandica*) is given me by Mr. Wood. A fine male was sent to him to be mounted, in the autumn of (about) 1885, shot in Plymouth, whether in fresh water or on the coast not being stated.

The Long-tailed Duck (*Clangula hyemalis*), that prince of flyers, is a familiar sight as it goes scaling past the points. It often comes into the ponds in autumn, in flocks or bunches. Mr. Bassett and I shot nine out of a flock of eleven in Nippenickett, Nov. 12, 1894, following them up in a row-boat. They could not be driven from the pond.

Three specimens of the Harlequin Duck (*Histrionica histrionica*) were taken off Manomet Point, Nov. 3, 1894. One of these is in my collection. This is the only record for this county with which I am acquainted. The species is common at Cape Sable, Nova Scotia, where it is known as the 'Rock Duck.'

One of the few ducks never as yet known to occur in our ponds is the Eider (*Somateria mollissima dresseri*). It is notably a marine bird, being commonly known as the 'Sea Duck.' Comparatively few come into Cape Cod Bay, most of them keeping

off outside the Cape. At Chatham it is abundant. Early in April thousands can be seen well off shore, flying north in long lines, or double lines.

The rare King Eider (*S. spectabilis*) has recently occurred at Manomet Point. Mr. W. H. Cleveland, of the Manomet Life-Saving Station, a careful and conscientious student of birds, is the authority. A single specimen was shot while flying past the Point, Nov. 15, 1895. Thick fog prevailed, and the day is remembered by many for the unusual number of Brant then taken. Another specimen was taken in the autumn of 1888, swimming alone in the cove south of the Point, thought perhaps to have been crippled while flying past the line of boats. This specimen, mounted, is at present in the possession of Mr. Cleveland's brother. Both of the above were males in full plumage. Still another specimen, said by the Station men to be of this species, was taken some years before this last, but Mr. C. cannot vouch for its identity.

Bare mention may be made, in passing, of the three Scoters, *Oidemia americana* being the least abundant of the three. They all occur in the ponds, though the one just mentioned is not so often seen there.

The tame little Ruddy Duck (*Erismatura rubida*), though sadly slaughtered, is not yet exterminated. I should call it far from uncommon, some years occurring in considerable numbers in some of the ponds. Flocks of as many as two dozen occasionally appear in October. Sometimes there is an irruption of them for a few days, and then all suddenly disappear. The past season they were scarcer than usual, only a few scattering ones being taken in Nippenickett. But in the previous autumn they were taken a number of times. About the middle of October a flock of twenty or more came into the pond, and not one got out alive.

The list closes with the Mergansers. The Red-breasted (*Merganser serrator*) is much the commonest, being the one usually taken on the coast, though common in the ponds. The Goosander (*M. merganser*) is popularly known as the 'Pond Sheldrake,' a term which describes its predilection for fresh water. The Hooded Merganser (*Lophodytes cucullatus*) is not common, but occurs regularly in the ponds, singly or in small flocks.

According to general testimony, the diminution of late years in the numbers of the ducks is very marked. Mr. Bassett, however, sees and takes in Nippenickett a larger number and greater variety of ducks of late years than ever before. The causes of the change in this case are not known, and it may be left to the reader to speculate upon them.

In all there are 28 species of ducks attributed to Massachusetts. We of course do not consider the Labrador and St. Domingo Ducks as occurring in the State. All of these 28 have occurred within comparatively recent years in Plymouth County. Twenty-four of them have been taken on fresh water. Barrow's Golden-eye would doubtless be added to this list, were the facts known, leaving only three of the ducks which, when with us, are strictly maritime, the two Eiders and the Harlequin. Of the 28 I should class seven only as decidedly rare,—the Ring-neck, Gadwall, Shoveller, Harlequin, King Eider, Barrow's Golden-eye, and Canvas-back.

JOHN ABBOT'S DRAWINGS OF THE BIRDS OF GEORGIA.

BY WALTER FAXON.

JOHN ABBOT's illustrations of the Lepidoptera of Georgia, edited by Sir James Edward Smith and published in two folio volumes at London in 1797, have made his name familiar to entomologists, but few ornithologists are aware that Abbot, during his sojourn in Georgia, made a series of colored drawings of the birds of that State. The Boston Society of Natural History has long possessed many of Abbot's unpublished drawings of Georgian insects¹, and there has lately come to light, in the

¹ These are bound in two volumes, one comprising 174 plates given to the Society by Asa Gray who received them from J. E. Gray of the British Museum, the other comprising 193 plates purchased of Dr. Oemler of Georgia.

library of the Society, a set of 181 water-color drawings of birds. This series of plates is accompanied by the following entry in the handwriting of the late Miss L. Foster¹: "Drawings of the Birds of Georgia, by John Abbot," but no record of how or when the collection came into the possession of the Society has yet been found. The plates are classified and numbered by Abbot himself from 1 up to 200, but nineteen are lost from the set. The names of the birds appear in most cases at the bottom of each plate, written in pencil the nomenclature being chiefly that of Wilson. One of the plates alone bears the inscription in ink, "J. Abbot delin. ad vivum, 1810," but the character of the drawings themselves as well as the considerable amount of Abbot's well known autograph on the backs of the plates leaves no doubt as to their origin.

The notes on the backs of the plates consist of memoranda in pencil relating to the dimensions of the birds drawn, often followed by the date (day of the month, but in no case the year) and notes on the colors and on the time of arrival of migratory species. These memoranda have in most cases been erased and replaced in many instances by the names of the birds in the writing of Dr. T. M. Brewer, through whose hands the whole lot of drawings must have passed. Fortunately, Abbot's notes can still be deciphered with time and patience.

We are chiefly indebted to Swainson² and S. H. Scudder³ for the few facts that are known concerning Abbot's life. Coming to America in the interest of several of the leading entomologists of England, probably about the year 1790, he soon settled in the State of Georgia, where he remained till as late as 1810. Here he mainly devoted himself to collecting, rearing, and drawing the insects of the State, together with the plants upon which they feed. The drawings published by Smith and those in the possession of the Boston Society of

¹ Miss Foster was Assistant in the Library from 1868 to 1885.

² Taxidermy, with the Biography of Zoölogists, and Notices of their Works. By William Swainson. Lardners's Cabinet Cyclopædia, Vol. CXXVI, 1840.

³ John Abbot, the Aurelian. By Samuel H. Scudder. Canadian Entomologist, XX, 1888, 150.

Natural History form but a small part of what he produced. Seventeen bound volumes of unpublished entomological drawings in the British Museum bear witness to his zeal and activity.¹

The place of Abbot's residence during his stay in Georgia has been barely rescued from oblivion by the late Col. Charles C. Jones² the historian of the State. From 1797 to 1847 the county seat of Screven Co., Ga. was the little town of Jacksonborough, situate some sixty or seventy miles N N W of Savannah and a few miles west of the Savannah River. It was here, according to Colonel Jones, that Abbot lived and wrought. After the removal of the public buildings from Jacksonborough to Sylvania in 1847, the old town was abandoned, its dwellings quickly fell to decay, and now a few shards of common pottery scattered over the surface of the soil alone serve to mark the place where it once stood.

From this region it is probable that most of the birds portrayed by Abbot came. Yet the considerable number of shore and sea birds included amongst the drawings would seem to show that the artist had recourse to the sea for some of his material.

Nineteen plates, as before said, are lost from the series. But if the remaining plates be arranged according to the numbers put upon them when the set was still unbroken their sequence will suggest the subjects of many of the missing numbers. Thus it is pretty safe to assume that Plate 16 was the male Red-winged Blackbird, 23 the Baltimore Oriole, 27 the male Boat-tailed Grackle, 29 the Purple Grackle, 31 the Yellow-billed Cuckoo, 44 the male Southern Hairy Woodpecker, 80 the Nonpareil, and so following. In this way we can, with some approach to precision, estimate the number of species included in the original set of 200 plates at about 160,—thirteen species being allowed for the nineteen missing numbers. A goodly number this, when one considers the period when the work was accomplished, the remoteness of the artist's residence from the sea, and the fact that ornithological pursuits were aside from the main purpose of his visit to

¹ See W. F. Kirby, in *Can. Entomol.*, XX, 1888, 230.

² *The Dead Towns of Georgia.* By Charles C. Jones. p. 240. *Coll. Georgia Hist. Soc.*, IV, 1878.

America. Some sixty years before Abbot came to Georgia, Mark Catesby was similarly engaged in illustrating the local fauna on the other side of the Savannah River, with special reference to the birds. Although Catesby had the advantage of a year's residence on the sea-board before he went up the Savannah River to live at Fort Moore, the number of Carolinian birds described and figured by him amounts to only 90 against Abbot's 160. Yet Catesby followed the pursuit with such ardor that he did not hesitate to affirm that few birds except aquatic species could have escaped him.¹

On looking through the Abbot bird-portraits several arrest the eye from their historic interest. Plate 68 is a good representation of Swainson's Warbler, drawn at least a quarter of a century before this species was described and named by Audubon. On the reverse of the plate is the following autograph note by Abbot: "L. 6. May 8. Swamp.—Swamp Worm-eater."

Swainson's Warbler was first described and figured by Audubon in 1834,² from specimens secured by John Bachman near Charleston, S. C., in 1832. Its second introduction to public notice was in the rôle of a bird of Georgia, in White's list of Georgia birds published by Alexander Gerhardt in 1855.³ The next record likewise relates to a Georgia specimen from Liberty County.⁴ But little was known concerning the habits of Swainson's Warbler until 1885, when Mr. William Brewster published a narrative of his experience in the bird's haunts near Charleston in the summer of 1884.⁵ It is now known to be a summer visitor to certain parts of North and South Carolina, Georgia, Florida, Alabama, Louisiana, Texas, Southeastern Missouri, and the Dismal Swamp of Virginia.

¹ The following species found among the Abbot drawings are not included in White's very full list of the birds of Georgia, published in 'Naumannia,' 1855, 382: *Nyctea nyctea*, *Loxia leucoptera*, *Ammodramus leconteii*, *Otocoris alpestris*, *Dendroica tigrina*, *Grus mexicana*, *Guara rubra*, *Totanus melanoleucus*, *Porzana carolina*, *Larus delawarensis*.

² Orn. Biog., II, 563.

³ Naumannia, 1855, 382.

⁴ Baird, Birds of North America, 1858, p. 253.

⁵ Auk, II, 1885, 65.

Plate 97.—Leconte's Sparrow (*Ammodramus leconteii*). This bird also was known to Abbot and drawn by him about forty years before it was described by Audubon. The next observer after Abbot who had the luck to meet with it was Maximilian, Prince of Wied, during his journey up the Missouri River in 1833. It was not until 1858, however, fourteen years after the species was described by Audubon, that Maximilian's account was published.¹ After a careful description of the specimen obtained, the Prince adds the following story of its capture, which gives one such a vivid idea of the elusive habits of the bird as to merit quotation: "I obtained a single specimen of this northern species near the middle course of the Missouri. The way in which the little bird crept about, just like a mouse, in the grass and under the bushes was remarkable. In fact, several of our party mistook it for a mouse. It was surrounded; yet, though unable to escape, it could not be forced to fly. It slipped quickly from one cover to another, while we all strove to catch it. When this was finally accomplished, I found that the supposed mouse was a little bird unknown to me."²

Ten years after Maximilian's capture of this specimen Audubon rediscovered the species on the upper Missouri and for the first time described and figured it in the seventh volume of the 'Birds of America,' p. 338, 1844.³ A quarter of a century then elapsed without further tidings of Leconte's Sparrow. Audubon's type was lost, Maximilian's was on the other side of the Atlantic, and the record of it overlooked. Certain ornithologists even began to doubt the existence of Leconte's Sparrow. Then a single specimen (a very bad one) came to light in the Smithsonian Institution,

¹ Journal für Ornithologie, VI, 1858, 340.

² This specimen is now with the Maximilian collection in the American Museum of Natural History of New York, according to Mr. J. A. Allen (Auk, III, 1886, 490), who does not appear to be aware that it was described by Maximilian in 1858.

³ Audubon's type specimen was shot on the 24th of May by Mr. J. G. Bell of New York, who accompanied Audubon on his Yellowstone Journey. Maximilian, through a curious misunderstanding of Audubon's narrative, says that *Ammodramus leconteii* has been taken in the State of New York in the month of May!

obtained in Washington Co., Texas, by Dr. Lincecum in 1869, but not recorded till 1872, in Coues's 'Key to North American Birds,' p. 137. Soon after, Dr. Coues himself had the pleasure of securing several examples of the discredited species in Dakota, in 1873.¹ But not until 1878, about seventy years after Abbot drew the portrait of Leconte's Sparrow in Georgia, was this bird rediscovered east of the Mississippi—in winter-quarters at Coosada, Ala.,—by N. C. Brown.² Finally, in 1881, Mr. C. J. Maynard³ detected it in Florida, and Mr. L. M. Loomis⁴ in Chester Co., South Carolina.

Further on we come to No. 161, the Scarlet Ibis. Most of the records of the Scarlet Ibis as a bird of the United States rest upon rather questionable evidence. Wilson⁵ supposed that it was found in the extreme southern part of Carolina, and in Georgia and Florida. The best Audubon could do was to get a glimpse of three, flying over the tops of the trees near Bayou Sara, La., in July, 1821.⁶ A fragment of a specimen was examined by Dr. Coues on the Rio Grande at Los Pinos, New Mexico, in June, 1864.⁷ One has been recorded as shot in Custer Co., Colorado, in May, 1876.⁸ Mr. Brewster⁹ found an old faded and moth-eaten specimen in the museum of the College of Charleston, labelled "Florida." Finally, to end this strange, if not very eventful history, Mr. W. E. D. Scott¹⁰ says that one was seen in Florida in 1888 by a plume-hunter in whom he has perfect confidence.¹¹

¹ Amer. Nat. VII, 1873, 748. Birds of the Northwest, 1874, 134.

² Bull. Nuttall Orn. Club, IV, 1879, 8.

³ Bull. Nuttall Orn. Club, VII, 1882, 121.

⁴ Bull. Nuttall Orn. Club, VII, 1882, 54.

⁵ American Ornithology, VIII, 1814, 41.

⁶ Orn. Biog., V, 1839, 62.

⁷ Key to North American Birds, 1872, 264; *id.*, 1887, 651.

⁸ Auk, XI, 1894, 324.

⁹ Bull. Nuttall Orn. Club, VIII, 1883, 185.

¹⁰ Auk, VI, 1889, 15.

¹¹ H. B. Bailey, in 'Forest and Stream Bird Notes,' 1881, p. 78, indexes under *Ibis rubra* a note in 'Forest and Stream,' III, 58, relating to some "Pink Curlews" killed by sportsmen at St. Augustine, Fla., in 1874. These "Pink Curlews" were without doubt Roseate Spoonbills.

The presence of the Scarlet Ibis among Abbot's drawings of the birds of Georgia establishes, to my mind, a better record for the United States than some of those above mentioned. It is highly improbable that he received a specimen from Central or South America and still more unlikely that he would have interpolated a foreign bird in this series of drawings. For we know from the whole tenor of his work in Georgia that it was his purpose to illustrate the local fauna.

Of the rarer birds for the latitude of Georgia that are included in the collection may be mentioned the Snowy Owl, the White-winged Crossbill, and the Horned Lark (*Otocoris alpestris*). The White-winged Crossbill has never to my knowledge been reported from so far south as Georgia. The arctic race of the Horned Lark, although noted by Catesby¹ as frequenting the sand-hills along the shore of South Carolina in winter, has within a few years been recorded as a novelty from that coast.²

A very remarkable Woodpecker is represented on Plate 48. It is like the male *Dryobates borealis* except that the red 'cockades' are enlarged so as to form one continuous bright red patch, extending across the nape, as in *D. nuttallii*, *D. villosus*, etc. The normal male and female *D. borealis* are figured on Plates 46 and 47 under Wilson's name of *Picus querulus*. Plate 48 is inscribed "*Picus* n. s.?" Both Mr. Brewster and Mr. Ridgway assure me that they have never seen the like of this bird. I take it to be a 'sport' of *Dryobates borealis*,—the manifestation of a tendency normally latent in this species, but commonly expressed in allied members of the genus. It is the converse of the condition sometimes seen in *D. villosus*, when the red occipital band is broken into a pair of spots,—right and left.

With regard to the period when the drawings were made, we have no evidence beyond the term of Abbot's residence in Georgia, the date 1810 in the legend under the figure of the Bald Eagle, and the manufacturer's water-marks which appear on the paper used. According to Mr. Scudder, Abbot came

¹ Nat. Hist. Carolina, I, 1731, 32, Pl. XXXII.

² A. T. Wayne, Auk, X, 1893, 205.

to America about 1790 and returned to England about 1810. This accords with the water-mark dates, which include various years from 1791 to 1810 inclusive. The extreme dates occur on the insect plates in the Boston Society of Natural History. The water-marks in the set of bird drawings are three: "J. Whatman, 1801" (22 plates), "Edmeads and Pine, 1802" (22 plates), and "S C, 1804" (8 plates). It is pretty certain, therefore, that the birds were drawn between 1800 and 1810. The final arrangement, enumeration, and identification of the figures were somewhat later, as is proved by citations of the sixth volume of Wilson's *Ornithology*, which was not published till 1812.

From an artistic point of view, these plates, although not so exquisitely elaborated as Abbot's insect drawings, are admirable. While the accessories are rather quaint and old-fashioned, the birds themselves, though unequal in finish, are for the most part accurately drawn and skilfully colored. In the simplicity and even monotony of the postures they recall Wilson's work rather than the more spirited figures of Audubon. In many ways these drawings evince Abbot's remarkable keenness of observation. Sexual and seasonal phases of plumage, so diverse as to be mistaken for specific differences by the earlier ornithologists, were understood by Abbot. Thus, on Plate 112 the male Black-throated Blue Warbler is joined with his sober-suited mate, although Wilson and many of his followers put them asunder. In other cases, nice subspecific distinctions, not recognized till lately by ornithologists, are unmistakably indicated in these drawings. Doubtless Abbot supposed them to be diversities of sex or age, but they bear witness all the same to his close discrimination. In only one instance is the artist guilty of a flagrant error. Plate 171 represents a Sanderling with a hind toe! It is inconceivable to anyone who has carefully studied the whole collection of drawings that Abbot himself was responsible for such a blunder. Swainson says that Abbot found it expedient to employ one or two assistant artists, whose copies he retouched. I am disposed to think that an assistant living on the sea-coast made color sketches of some of the shore and sea birds and that Abbot reproduced these

sketches. It was Abbot's wont to note the dimensions of the birds that he drew from life, in the form of memoranda entered on the reverse of the plates. This is done for most of the land birds, but it is a noteworthy fact that very few of the portraits of sea birds are so endorsed. Whoever drew the Sanderling decreed that this bird, being a Sandpiper, should not be liable; like the three-toed Waders in Gilbert White's speculation, to "perpetual vacillations"!

If Abbot—a contemporary of Wilson and Vieillot—had secured the speedy publication of this remarkable collection of drawings, with a suitable accompaniment of text, his name would be famous in the annals of American ornithology. "Many are poets who have never penned their inspiration." So, in the light of the work here reviewed, Abbot appears to have been an ornithologist—but without the name.

A catalogue of these drawings is appended—Abbot's 'local list,' made during the opening decade of the century now drawing to a close.

PLATE

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| 1. Cathartes aura (<i>Linn.</i>). | 18. Agelaius phœniceus (<i>Linn.</i>).
Young male. |
| 2. Catharista atrata (<i>Bartr.</i>). | 19. Agelaius phœniceus (<i>Linn.</i>).
Albino. |
| 3. Haliaeetus leucocephalus
(<i>Linn.</i>). Full plumage. | 20. Scolecophagus carolinus
(<i>Mull.</i>) Spring plumage. |
| 4. Buteo lineatus (<i>Gmel.</i>). | 21. Scolecophagus carolinus
(<i>Mull.</i>). Autumn plumage. |
| 5. " " " Young. | 22. Molothrus ater (<i>Bodd.</i>). Male. |
| 6. Accipiter cooperii (<i>Bonap.</i>). | 23. [Missing.] |
| 7. Circus hudsonius (<i>Linn.</i>).
Male in winter plumage. | 24. Icterus spurius (<i>Linn.</i>). Adult
male. |
| 8. Falco sparverius. <i>Linn.</i> Male. | 25. Icterus spurius (<i>Linn.</i>). Fe-
male. |
| 9. [Missing.] | 26. Icterus spurius (<i>Linn.</i>). Male
of second year. |
| 10. Nyctea nyctea (<i>Linn.</i>). | 27. [Missing.] |
| 11. Syrniurn nebulosum alleni
<i>Ridgw.</i> | 28. Quiscalus major <i>Vieill.</i> Fe-
male. |
| 12. [Missing.] | 29. [Missing.] |
| 13. " " | 30. " " |
| 14. Corvus americanus <i>Aud.</i> | 31. " " |
| 15. Cyanocitta cristata (<i>Linn.</i>). | |
| 16. [Missing.] | |
| 17. Agelaius phœniceus (<i>Linn.</i>).
Female. | |

32. *Coccyzus erythrophthalmus* (Wils.).
33. *Campephilus principalis* (Linn.). Male.
34. *Campephilus principalis* (Linn.). Female.
35. *Ceophlæus pileatus* (Linn.). Male.
36. *Ceophlæus pileatus* (Linn.). Female.
37. *Colaptes auratus* (Linn.). Male.
38. *Colaptes auratus* (Linn.). Female.
39. *Melanerpes carolinus* (Linn.). Male.
40. *Melanerpes carolinus* (Linn.). Female.
41. *Melanerpes erythrocephalus* (Linn.).
42. *Sphyrapicus varius* (Linn.). Male.
43. *Sphyrapicus varius* (Linn.). Female.
44. [Missing.]
45. *Dryobates villosus audubonii* (Swains.). Female.
46. *Dryobates borealis* (Vieill.). Male.
47. *Dryobates borealis* (Vieill.). Female.
48. *Dryobates borealis* (Vieill.)? Male.
49. *Dryobates pubescens* (Linn.). Male.
50. *Dryobates pubescens* (Linn.). Female.
51. [Missing.]
52. *Sitta carolinensis* Lath.
53. " *canadensis* Linn.
54. " *pusilla* Lath.
55. *Certhia familiaris americana* (Bonap.).
56. *Trochilus colubris* Linn. Male and female.
57. *Sturnella magna* (Linn.).
58. *Mimus polyglottos* (Linn.).
59. *Harporhynchus rufus* (Linn.).
60. *Turdus mustelinus* Gmel.
61. " *fuscescens* Steph.
62. " *aonalaschkæ pallasii* (Cab.).
63. *Seiurus aurocapillus* (Linn.).
64. " *noveboracensis* (Gmel.).
Two figs. Upper one S. n. *notabilis* Ridgw.
65. *Merula migratoria* (Linn.). Male.
66. *Merula migratoria* (Linn.). Female.
67. *Helmitherus vermivorus* (Gmel.).
68. *Helinaia swainsonii* Aud.
69. *Ampelis cedrorum* (Vieill.).
70. *Guiraca cærulea* (Linn.). Male.
71. *Guiraca cærulea* (Linn.). Female.
72. *Cardinalis cardinalis* (Linn.). Male.
73. *Cardinalis cardinalis* (Linn.). Female.
74. *Loxia leucoptera* Gmel. Male.
75. *Dolichonyx oryzivorus* (Linn.). Male.
76. *Dolichonyx oryzivorus* (Linn.). Female.
77. *Pipilo erythrophthalmus* (Linn.). Male.
78. *Pipilo erythrophthalmus* (Linn.). Female.
79. *Passerina cyanea* (Linn.). Male and female.
80. [Missing.]
81. *Junco hyemalis* (Linn.). Male and female or male in winter.
82. *Spinus tristis* (Linn.). Male and female.
83. *Passerina cyanea* (Linn.). Young.
84. *Piranga rubra* (Linn.). Male.
85. " " " Female.

86. *Piranga erythromelas* Vieill.
Male.
87. *Carpodacus* *putpureus*
(*Gmel.*). Male.
88. *Carpodacus* *purpureus*
(*Gmel.*). Female.
89. *Passerella iliaca* (*Merr.*).
Two figs.
90. *Pooecetes gramineus* (*Gmel.*).
91. *Zonotrichia albicollis* (*Gmel.*).
Adult and immature.
92. *Passerculus sandwichensis*
savanna (*Wils.*). Two figs.
93. *Melospiza fasciata* (*Gmel.*).
94. [Missing.]
95. " "
96. " "
97. *Ammodramus leconteii* (*Aud.*).
98. *Spizella socialis* (*Wils.*).
Adult and immature.
99. *Spizella pusilla* (*Wils.*).
Two figs.
100. [Missing.]
101. *Galeoscoptes carolinensis*
(*Linn.*).
102. *Contopus virens* (*Linn.*).
103. *Vireo olivaceus* (*Linn.*).
104. " *solitarius* (*Wils.*).
105. " *noveboracensis* (*Gmel.*).
Two figs. Lower one looks like V.
n. *maynardi*, *Brewst.*
106. *Setophaga ruticilla* (*Linn.*).
Male and female.
107. *Icteria virens* (*Linn.*).
108. *Otocoris alpestris* (*Linn.*).
109. *Anthus pensilvanicus*
(*Lath.*).
110. *Sialia sialis* (*Linn.*). Male.
111. " " (*Linn.*). Female.
112. *Dendroica caerulescens*
(*Gmel.*). Male and female.
113. *Dendroica vigorsii* (*Aud.*).
Male and female.
114. *Dendroica palmarum*
(*Gmel.*) and *D. p. hypochrysea*
Ridgw.
115. *Dendroica tigrina* (*Gmel.*).
Male in autumnal plumage.
116. *Dendroica coronata* (*Linn.*).
Two figs.
117. *Dendroica striata* (*Forst.*).
Male in spring and young first
autumn.
118. *Dendroica tigrina* (*Gmel.*).
Female.
119. *Sylvania mitrata* (*Gmel.*).
Male and female.
120. *Geothlypis trichas* (*Linn.*).
121. *Protonotaria citrea* (*Bodd.*).
Two figs.
122. *Dendroica aestiva* (*Gmel.*).
Male and female.
123. *Dendroica discolor* (*Vieill.*).
Male and female.
124. *Compsothlypis americana*
(*Linn.*). Male and female.
125. *Dendroica dominica* (*Linn.*).
Male and young first autumn.
126. *Thryothorus ludovicianus*
(*Lath.*). Two figs.
127. *Troglodytes aëdon* Vieill.
128. *Cistothorus stellaris* (*Licht.*).
129. *Regulus calendula* (*Linn.*).
Male and female.
130. *Regulus satrapa* *Licht.* Male
and female.
131. *Mniotilta varia* (*Linn.*).
Two figs.
132. *Parus bicolor* *Linn.*
133. " *carolinensis* *Aud.*
134. *Polioptila caerulea* (*Linn.*).
Male and female.
135. *Progne subis* (*Linn.*). Male.
136. " " " Female.
137. *Chelidon erythrogastra*
(*Bodd.*).
138. [Missing.]
139. *Chatura pelagica* (*Linn.*).
140. *Stelgidopteryx serripennis*
(*Aud.*)?
141. *Antrostomus carolinensis*
(*Gmel.*). Male.

142. *Chordeiles virginianus* (Gmel.). Male.
143. *Ectopistes migratorius* (Linn.). Male.
144. *Zenaidura macroura* (Linn.). Male.
145. *Columbigallina passerina terrestris* Chapm. Male.
146. *Colinus virginianus* (Linn.).
147. *Grus mexicana* (Müll.).
148. *Botaurus lentiginosus* (Mon-tag.).
149. *Nycticorax violaceus* (Linn.).
150. " " Young.
151. *Ardea egretta* Gmel.
152. *Nycticorax nycticorax naevius* (Bodd.). Adult.
153. *Ardea tricolor ruficollis* (Gosse). Adult.
154. *Ardea tricolor ruficollis* (Gosse). Young.
155. *Ardea cærulea* Linn. Blue phase.
156. *Ardea cærulea* Linn. White phase.
157. *Ardea virescens* Linn.
158. " " "
159. *Guara alba* (Linn.). Young.
160. " " " Adult.
161. " *rubra* (Linn.). Adult.
162. *Numenius longirostris* Wils.
163. *Limosa fedoa* (Linn.). Young.
164. *Gallinago delicata* (Ord).
165. *Philohela minor* (Gmel.).
166. *Symphemia semipalmata inornata* Brewst. Winter plumage.
167. *Totanus melanoleucus* (Gmel.).
168. *Totanus flavipes* (Gmel.).
169. [Missing.]
170. *Totanus solitarius* (Wils.).
171. *Calidris arenaria* (Linn.). Winter plumage.
172. *Actitis macularia* (Linn.). Adult.
173. *Actitis macularia* (Linn.). Young.
174. *Tringa minutilla* Vieill.
175. *Ægialitis vocifera* (Linn.).
176. *Hæmatopus palliatus* Temm.
177. *Rallus elegans* Aud.
178. *Porzana carolina* (Linn.). Young.
179. *Porzana carolina* (Linn.). Adult.
180. *Ionornis martinica* (Linn.).
181. *Gallinula galeata* (Licht.).
182. *Rynchops nigra* Linn.
183. *Hydrochelidon nigra surinamensis* (Gmel.). Young.
184. *Podilymbus podiceps* (Linn.). Winter plumage.
185. *Larus delawarensis* Ord. Young.
186. *Larus atricilla* Linn. Winter plumage.
187. *Gelochelidon nilotica* (Hasselq.).
188. *Merganser serrator* (Linn.). Male.
189. [Missing.]
190. *Lophodytes cucullatus* (Linn.). Male.
191. *Lophodytes cucullatus* (Linn.). Female.
192. *Spatula clypeata* (Linn.). Male.
193. *Aix sponsa* (Linn.). Male.
194. *Aythya collaris* (Donov.). Male.
195. *Aythya affinis* (Eyt.). Male.
196. " " " Female.
197. *Clangula clangula americana* (Bonap.). Female.
198. *Charitonetta albeola* (Linn.). Male.
199. *Charitonetta albeola* (Linn.). Female.
200. *Anas carolinensis* Gmel. Male.

THE PENINSULA OF MISSOURI AS A WINTER HOME
FOR BIRDS.

BY O. WIDMANN.

A LIST of 47 species of birds, found around Cardwell, the present terminus of the Buffalo Island R. R., Dunklin Co., Mo., January 14-18, 1896, not only reflects the woodland character of the region, but also illustrates the great advantages of heavily timbered lowland for the winter sojourn of certain birds in a comparatively cold climate.

Every winter snow covers the ground to a depth of several inches for a whole fortnight, and all the watercourses, including the St. Francis River itself, are closed for a like period with an ice sheet several inches thick. The mercury is pretty sure to go as low as 10° , and in severe winter even falls to -10° , but as a rule the cold squalls last only a few days.

With the exception of a narrow ridge, called Grand Prairie, which separates the Little River from the St. Francis basin, the whole region is covered with original forest, and farming is done in clearings and deadenings, situated within this forest. On the railroad line saw mills have been erected, and the best lumber, especially oak, is now being cut out; but in a region like this, where lumber is so abundant, only the most valuable part of a tree is sawed off and taken to the mill; all the rest is left to decay where it fell. Many trees, having been cut green, retain the dry foliage throughout the winter.

In their slow decay the huge treetops, covering several square rods of ground and thus keeping off the browsing cattle, allow the weeds, briars and blackberry brambles to grow in profusion. Rich soil, combined with an abundance of moisture and sunlight, form in a few years the most impenetrable thickets, whose depths are accessible to hardly anything else but small birds, and for these they afford an unexcelled resort at night and in inclement weather, providing safety, shelter and food. The heavy cover protects not only birds, but also vegetation and lower animal life, and the carpet of green grasses, ferns and a variety of hardy plants, which

is spread over the floor of the forest, is much richer under these treetops.

Such is an outline of the locality where numberless flocks of several kinds of Fringillidæ spend their winter in pleasing harmony and apparently in the best possible state of mind and body. Even when the rain is coming down in a continuous drizzle all day long the birds in these woods are not only busy and active, but also contented and happy; and on a day, which to ordinary persons seemed the gloomiest possible "we" and the birds were the happiest crowd.

Especially the Fox Sparrow (*Passerella iliaca*) deserves the highest praise for exhibiting the most undisturbable good humor; all day long, and more than ever in the dusk of evening, his melodious voice goes through the leafless woods. It is not their full whistle, which we hear in spring, but enough of it to show how happy they are and enough to make others happy, too.

It is a common thing to see a couple of Peabody-birds (*Zonotrichia albicollis*) take up the thread of musical notes where the other lets it drop, hold it up for others who spin it out for quite a while, until the stentorian voice of Mr. Pipilo falls in and cuts it short with his *towhees*.

All these birds are never so cheerful where only a few are together. They feel much safer and easier in a crowd, because the trying work of constant vigilance is divided among so many, and there is no doubt that they really enjoy the company of others of their kind, and of birds with similar habits, though of different genera, and even other families.

The most abundant member of the Sparrow family in these woods is undoubtedly the White-throated Sparrow or Peabody-bird. It does not occur in small parties of half a dozen or so, as it does in the counties bordering the Missouri River, 250 miles farther north. Though there may be only a few chirps in the underbrush when you pass by, enter their recesses and you will see them rise from all sides, and you may count 50 before you get through. It is a phlegmatic bird, not easily alarmed, and keeps sitting in the trees and bushes to give you time for your arithmetic. The Fox Sparrows are second in numbers and very often go up with the White-throats, but as a rule they are more partial to moist ground.

At the other side, on the higher levels, where corn and cotton fields occupy a part of the ground, the immense flocks of Juncos (*Junco hyemalis*) join those of the Peabody-birds, and they in turn are often flanked by jolly troops of Tree Sparrows (*Spizella monticola*) and Goldfinches (*Spinus tristis*).

The numerous Pipilos (*Pipilo erythrophthalmus*) associate with the Fox Sparrows and Peabody-birds in the woods, but the Cardinals (*Cardinalis cardinalis*) keep company to all; they are in the deep woods along the sloughs, as well as in the openings along the fences. Their loud song is familiar to all; it wakes the sleepers at the earliest dawn and falls unexpectedly upon the ear in seemingly deserted regions.

The Song and Swamp Sparrows (*Melospiza fasciata* and *M. georgiana*) do not form flocks by themselves, but are scattered in small parties and help to swell the throng of kindred souls.

It is a blessed region where we can listen to the sweet notes of all these songsters in deepest winter, in rain, in sleet and snow; and the dreaded season has lost its terrors of loneliness and desolation, where such true friends of song and happy companionship have made their winter home.

Though the Sparrow family forms the gross of the camping army in the woods, we are every now and then reminded of the fact that we are in a country, with a climate which the Thrasher (*Harporhynchus rufus*) finds not too cold to endure winter's longest nights and on food rich enough to find a sufficiency in its shortest days. Although he does his best to elude the gaze of the intruder, his conspicuous size does not admit of much success in this endeavor, and we must class him among the best known birds of the region at this season. Happy he who gets a chance to hear the great composer tune his latest thoughts at half-voice in the bushes; his Easter cantata is not ready yet, but long before spring has come to northern climes the Peninsula Thrasher will mount his favorite perch and proclaim in his exquisitely melodious way that within himself the hope for an early resurrection of love's sweet season is growing with each day.

A unique sight met my eye on Jan. 15: a Thrasher with a pure white nape, an area about one and a half inches wide, but running to a point on the side of the neck, almost encircling it.

At this same day and place another rarity was found: a Catbird (*Galeoscoptes carolinensis*), feeding quietly among the leaves on the ground, and after a while flying up into a hackberry tree to partake of a few berries. Besides the white-naped Thrasher its nearest neighbors were the usual congregation of Fox Sparrows, Pipilos, Cardinals, Song Sparrows, etc.

Two other members of the Wren family constitute an important ingredient of the bird fauna of this region, and, though of small and even diminutive size, contribute greatly to the enjoyment of the visitor by their sprightly actions, confiding ways and pleasing notes. I mean the Carolina Wren (*Thryothorus ludovicianus*) and the Winter Wren (*Troglodytes hiemalis*). While the former, as a native of the soil, is the real owner of the ground and tells all who come and at all times of day and year that his title is as good as any title on decaying logs and debris ever was, he leases part of his domain to his little cousin from the north, who takes it regularly for just six months, from October 1 to April 1.

Though it seems liberal enough to thus divide an old estate with a distant relative, the lord and owner of the ground takes care to keep the higher levels for himself, and our little brownie has to put up with the watery regions of the slough and overflow. Here he is, during all his stay, as much at home as in his northern woods in summer. He, who knows him only from his flying visits, is most agreeably surprised to see he has a voice not only for a scold, but also for a praise, a rich, long song which is in perfect harmony with his surroundings. With this song he announces his arrival in October and gives it with increased vigor long before he leaves in spring. He is on friendly terms with his solemn neighbor, the Hermit Thrush (*Turdus aonalaschkae pallasii*) who, like him, has a predilection for the overflow, and who, like him, is silent when away from home. He must regard this region as a kind of home, since he greets it with his most tender strains on his return in the fall, and sings aloud before he leaves it for the north.

In spite of near relationship the Robin (*Merula migratoria*) is an entirely different sort of winter boarder in this region. He does not hide from morning until night; nor does he look about for ages before he takes a heart to speak out what he thinks. You

can hear him when he comes, and he does not come alone; nor does he stay in one particular place until he becomes a bore; he comes in jolly troops, feeds, sings and goes.

While the Wrens and Thrushes keep company to the scratching Sparrows on the ground, the Paridæ and Picidæ populate the trees from root to highest tip.

Of Woodpeckers there are seven species in these woods, the Downy (*Dryobates pubescens*), the Hairy (*D. villosus*), the Flicker (*Colaptes auratus*), the Sapsucker (*Sphyrapicus varius*), the Red-belly (*Melanerpes carolinus*), the Redhead (*M. erythrocephalus*), and the Pileated (*Geophlæhus pileatus*).

Though the Redheads are oftener seen in the deadenings than in the deep forest, all seven species are so plentifully and thoroughly distributed over the woods that it has actually occurred that all seven species were together on near trees in front of me at one and the same moment.

As a rule the Sapsuckers are by far the least, the Redbellies the most talkative of the family, but all are making some noise, hammering or calling, and there is not a minute throughout the day when one or the other cannot be heard.

Less scattered, and therefore not quite so omnipresent, are the Paridæ. They are, besides, more under the influence of the weather. For some reasons, probably best known to their dressmaker, they dislike damp weather, which makes them somewhat morose; but they are quick to respond to the exhilarating effect of a high barometer with its bright skies and frosty mornings.

As usual the three Paridæ, *Parus bicolor*, *P. carolinensis*, and *Sitta carolinensis*, are mostly found associated with a few representatives of kindred folks, especially *Certhia familiaris americana* and *Regulus satrapa*, both of which are common winter sojourners in these beautiful woods.

Only once observed was *Sitta canadensis*, apparently a stranger to the region; but a bird, whose abundance at this time was not expected, is the Ruby-crowned Kinglet (*Regulus calendula*), which was found in all places visited and in all sorts of company, several times with Yellow-rumps (*Dendroica coronata*). There is not much poison ivy growing in these woods, but wherever there

is some, we hear the *chuck* of the Yellow-rump and see a few of the sprightly, restless birds.

Not a single Crow was to be seen in this country, and Blackbirds were among the rarities. The barnyard is the only place where a troop of Rusties (*Scolecophagus carolinus*) is likely to be seen on a midwinter's day and a few stray Redwings (*Agelaius phoeniceus*) may be encountered in the clearings.

Though not very numerous here in summer the Bluejay (*Cyanocitta cristata*) is now one of the most abundant and conspicuous birds. They seem to have come from the north in search of health; they go about their work singly, but hold frequent meetings for sundry purposes and may often be seen gesticulating and complimenting each other on their good appearance and healthy looks, and truly they seem to feel uncommonly well.

The Bobwhite (*Colinus virginianus*) also is an inmate of the woods where he has his favorite resting places under fallen tree-tops.

The Wild Turkey (*Meleagris gallopavo*) is still a pretty common bird in this comparatively wild region, where cornfields, blackberry thickets and cypress-swamps join each other in all directions. In the cornfield he finds some of his food, in the thickets a retreat, and in the swamps a roost. He is not known to roost anywhere else but above water and if the weather is not too bad he retires to the higher branches.

Ducks are unusually rare in the region this winter and three Hooded Mergansers (*Lophodytes cucullatus*) were all the Water Birds met with.

The total absence of Ducks is generally accounted for by lack of food and superabundance of water. One of the main articles of their diet is the seed of smartweed, but the crop of the high southern smartweed (*Polygonum densiflorum*) has been an entire failure. The plant came up slowly last summer, probably in consequence of the unusually severe winter of 1894-95, and it was in full bloom when the frosts of the first October days visited the region. Though no bad effect was visible at the time, the frost seems to have checked fructification.

The clearings and deadenings, enclosed as they are by the forest, do not change the character of the country greatly, but

they harbor a few species which are not found in the forest itself, and the Hawks and Owls resort to them for preying upon the rodents, which infest the corn and cotton fields.

In such clearings we have repeatedly heard the cheerful carols of Bluebirds (*Sialia sialis*) and in view of our experience with the species last spring, we are doubly glad to hear them. Does not each note contain a promise of extraordinary value? Is it not as if a real treasure, already given up as lost, is to be restored to us again?

On a solitary tree in the field sits a solitary Shrike, and higher up on top of an old stump a male Sparrow Hawk; he is busy-ing himself with something, but fearing approach he leaves and takes with him his prey—a woodrat. On a distant tree an old Redshoulder (*Buteo lineatus*) holds a look-out for the benefit of the farmer and over a particularly odoriferous spot six Turkey Vultures (*Cathartes aura*) are drawing closer and closer circles, apparently intent on an early descent upon the remains of one of the farmer's special pets.

A small troop of Meadowlarks (*Sturnella magna*) is changing its field of labor to another part of the big cornfield, and from the old rail fence comes a harsh, shrike-like, note: it is the expression of surprise on the part of a Mockingbird. Before we turn to leave we get a glimpse of the only Purple Finch (*Carpodacus purpureus*) met with in this region, and following the fence a flock of at least one hundred small birds is seen going up from the cornfield as if at a word of command. They are mostly Juncos and Goldfinches, but we also identify a few Field Sparrows (*Spizella pusilla*), a species which we found only at three or four places and in small numbers.

Still watching the host of frightened Fringillidæ we learn the cause of the stampede, a Barred Owl (*Syrnium nebulosum*), abroad in the middle of the afternoon, but apparently occupied with thoughts of a defensive, rather than of an offensive nature.

THE BLACK-VENTED SHEARWATER (*PUFFINUS*
OPISTHOMELAS).

BY A. W. ANTHONY.

MR. LEVERETT M. LOOMIS has recently published in the Proceedings of the California Academy of Sciences (Ser. 2, Vols. V, VI), a series of notes on the Water Birds of Southern California treating largely on the migration of certain species.

It is not my intention to criticise the above papers nor to in any way throw discredit upon the published observations of the writer, but, as the subject is one to which I have paid especial attention for a number of years, to place on record a few of my notes on one of the species observed by Mr. Loomis, as they are in some respects at variance with the conclusions arrived at by that writer.

In his 'California Water Birds' (No. II, p. 2), Mr. Loomis says: "Winter migration in birds nesting in the Northern Hemisphere is a well-known fact, there being continual movement southward and northward as the zone of snow and ice advances and retreats, but migration southward in the Northern Hemisphere in winter to breeding grounds appears to have escaped the observations of ornithologists. Such a migration exists in the Black-vented Shearwaters." And again (l. c., p. 7): "The Black-vented Shearwaters at Monterey were undoubtedly migrating to a breeding habitat farther South. While their destination may have been north of the equator it seems highly probable that they did not stop short of the Southern Hemisphere."

That the Black-vented Shearwater is a resident on the coast of California, nesting on several of the islands of the peninsula and coast of Southern California at least, I have known for several years. Just how far north their breeding habitat extends I am unable to say but have found the species not uncommon on several occasions off the Columbia River during the summer months and in November and January.

As very little has been published regarding this Shearwater, and as almost nothing is known of its nesting habits, I will take

this opportunity of giving some of my notes in detail, while establishing its claim to a position among our breeding birds.

On May 15, 1892, in company with Messrs. Charles H. Townsend and Clark P. Streater, I reached Guadalupe Island from San Diego and anchored under the high cliffs of lava at the North Head, about the middle of the afternoon.

Guadalupe lies about 220 miles south of San Diego, and about 65 miles from the nearest mainland, Punta Baja, on the Peninsula. The island is entirely of volcanic matter, huge cliffs of lava rising often 3000 feet from the sea. These are honey-combed by thousands of holes and miniature caves, offering unexcelled nesting sites for Cassin's Auklet, Xantus's Murrelet and other burrowing species, including the Black-vented Shearwater. Shortly after dark I was called on deck to listen to and identify some bird notes that came from the crags almost over our little schooner. The outcry soon increased to a moderate uproar, and was immediately recognized as the breeding notes of *Puffinus opisthomelas*, which I had several times heard in January and February while the birds were mating off the coast of San Diego County.

It would be impossible to describe accurately these notes. They were a series of gasping wheezy cries, resembling somewhat the escape of steam through a partly clogged pipe, uttered in a slightly varied key and repeated from four or five, to ten times. During calm weather in January, February, and March flocks of a dozen to several hundred of these Shearwaters often collect on the water well off shore and at such times I have heard the same notes from two or more birds as they chased each other, half running, half flying over the water. From the notes that came from the cliffs I thought that the birds were chasing one another, and a little later many of them came down to the water and were occasionally seen as they flashed by within the circle cast by our anchor light. After an hour or so the outcry somewhat subsided and I think most of the birds went off shore to feed, returning before daylight, for during nearly two weeks spent in cruising about the island only one flock of Shearwaters was seen in the daytime.

The cliffs about the North Head are all inaccessible, rising directly from the water, from a few hundred, to nearly or quite

three thousand feet, so that nothing could be learned of their nesting at that point. Three days later, however, we dropped anchor in Wheeler's Bay, at the southern end of the island, where the land is somewhat lower, and here a colony was found near the water. The burrows were in every instance either under a huge block of lava or in a crevice, where they were as much out of our reach as they were in the cliffs. A few of the burrows might have been opened possibly had we been provided with crowbars and suitable tools for wedging apart the blocks of lava, but after several ineffectual attempts with the tools nature provided we gave up and set a few steel traps at the mouths of some of the burrows in order to establish beyond dispute the identity of the species.

The next morning one or two Black-vented Shearwaters were taken from the traps and one of them, when hauled from the burrow, gave vent to his feelings in the gasping cry which we had heard every night since our arrival at the island. Two females were found by Mr. Streater in a crevice between two blocks of lava and secured, but no eggs or sign of nest was to be found. From this I thought that perhaps they were through with their nesting but had not yet abandoned the burrows during the day. The specimens prepared by me had evidently bred, and doubtless had at that time well grown young. Burrows were several times found two or three miles from the beach and as high as 4,000 feet altitude, and the mutilated bodies of freshly killed birds were often found where cats had left them. These felines, the descendants of domestic animals, introduced by the Mexicans, fairly infest the island and have made very serious inroads on the feathered inhabitants of Guadalupe, threatening some species with ultimate extermination.

A night was spent in a cypress grove three miles from the water and over 4,000 feet in altitude. Several times during the night I heard Shearwaters chasing each other through the grove and it is not impossible that a few were nesting there.

Major Chas. E. Bendire writes me that there are four eggs of this species in the National Museum collection, collected in 1873 on Santa Barbara Island by Capt. C. M. Scammon. I have never explored the Northern Islands of the Santa Barbara group, but I

am satisfied that Shearwaters do not nest on either San Clemente or Santa Catalina Islands. From information obtained from a reliable source I am inclined to think they are not uncommon on two or more of the smaller outlying islands.

During February and March of the current year ninety-eight per cent. of the Black-vented Shearwaters observed off San Diego were flying northward and the reproductive organs of those taken late in February indicated that the nesting season was very near at hand. They would have bred within two or three weeks I think; since then none have been shot, so I am unable to carry the data further.

The presence of this species along the coast of Southern and Lower California seems to be governed very largely by the food supply. They are common at any time, less so during the breeding season, when many are in the burrows during the day, — and vastly more abundant in late July, August, and September when they follow the large schools of herring and other small fish that come in shore at that season.

They are often seen in flocks of several thousands where fish are plenty. On one occasion I met with a flock on the coast of Lower California that I estimated contained not less than 50,000 Shearwaters. Many were so gorged with herring that they could not rise from the water, but flapped along the surface in advance of the steamer until nearly overtaken when they would dive. They would usually come up near enough to the vessel to be, if anything, more frightened than before, but could not take wing until they had disgorged a quantity of half digested fish, after which they flew off with apparent ease. It is only during very calm weather that this species is seen resting on the water. At such times they collect in very compact flocks, covering the water till there is but little room left within the circle that they almost invariably form. The first gentle breeze will start them on their journey again, and I have learned to have confidence in a breeze that starts them flying, for as far as my observations go they only rise if the wind is to be continuous, and will pay no attention to a gentle puff that will die out in a few minutes.

None of our Pacific coast seabirds adhere so closely to

established fly lines¹ as do the three species of *Puffinus*; even when flying fifty miles or more from land the first flock that passes will, with almost absolute certainty, mark the line which the next will follow, even though they be an hour behind. And I have long since discovered that in order to secure specimens of these shy species the boat must be placed in their fly lines. A flock will, on encountering a skiff, directly in their path, either divide and pass on either side or all swerve slightly to one side, immediately resuming their line of travel in either case. At times, however, they are easily turned from their course.

On January 23, I was drifting in a skiff off Point Loma, watching the Black-vented Shearwaters which were flying south along the western edge of an extensive bed of kelp. A garbage scow had sailed out through the kelp an hour before, leaving a broad oily 'slick' a hundred yards in width, extending two or three miles westward, at right angles to the course taken by the Shearwaters, which were passing in small flocks of four or five to a dozen every ten or fifteen minutes. Each flock turned sharply about when at a distance of a hundred yards from the oily water, and keeping at about that distance and to the windward, hurried on toward the west. *Not one bird* did I see cross contaminated water. I could detect no odor from the oil nor could the birds, had any existed, for they were flying down the wind.

I have never seen Black-vented Shearwaters pay any attention to bait or refuse thrown from the ship's galley, though Dark-bodied, Pink-footed, and Slender-billed Shearwaters will light to pick up floating garbage.

Though all of our Shearwaters prefer to keep rather well off shore, they will at times follow schools of small fish into shoal water. I once saw a flock of one or two hundred Black-vented Shearwaters feeding in the surf at Cape Colnett. Hovering over the advancing breaker they followed it to the beach, returning to meet the next, plunging repeatedly into its foamy crest for some species of small fish. They evidently did not feel at home so near land, for after a few minutes fishing they hurried out to sea again.

¹ In this connection see Mackay on 'Fly Lines,' Auk, Vol. X, p. 245.

A complete molt of all the feathers occurs in July and August in this species (*P. opisthomelas*),—and a more or less complete molt of the feathers of the head and body takes place in January and February. *P. griseus* and *P. creatopus* also, I think, undergo a complete molt in July and August, but whether they share with *opisthomelas* a partial molt in early spring, I am unable to say from lack of material taken in proper season.

At times when I have found a pronounced flight of Shearwaters near shore I have usually if not always found a flight in the opposite direction farther at sea. This habit of flying in circles or advancing in a series of loops, is very noticeable when the birds are quartering the sea for small fish. Their circles are then often small enough to enable one to see the entire circuit. I recently made mention of this habit in a letter to Mr. Chase Littlejohn and his reply, which lies before me, will bear quoting from. He says: "During the summer there are untold thousands of them in Alaska and they are not rare in winter. Your remarks about the direction the Shearwaters flew interested me very much, and bring to mind facts that I had not thought of for some time. I think had it been possible for you to have followed a flight for a few hours you would have found yourself back where you started, for my belief is that *flocks* almost always, if not invariably, fly in circles, moving for hours, and even days in the same vicinity; and then again, travelling in a given direction, but still in circles. I have many times been at or near the center of a ring when it was just possible to see the birds in any direction, and from that down to circles only a few hundred yards in diameter. When we know that they fly in circles as far as the eye can see, is it not reasonable to think that they might extend it for a much greater distance and move south in-shore while, as you say, they were going north off-shore."

Mr. Littlejohn's notes on the Alaskan birds refer to the Slender-billed Shearwater, but are pertinent as I have found the flight very similar in all of our species.

RECENT OBSERVATIONS ON *HISTRIONICUS HISTRIONICUS* IN MAINE.

BY ARTHUR H. NORTON.

IN THE month of February, 1894, the writer spent several days on some of the outermost islands of Penobscot Bay, for the sole purpose of observing and collecting winter birds, and more especially to observe this species in life. I was accompanied by Mr. Fred Rackliff, a man admirably qualified for the work before us, he being an expert surfman, thoroughly acquainted with the region we had chosen, and a skilful ornithological collector. Had I been otherwise attended, my efforts in this connection would have been futile, owing to the sudden and violent changes of weather and sea on this coast in winter, and to the distance and roughness of the islands where we were to perform our labors.

Our departure was made from the main on Feb. 2 at 2 P. M., with a light westerly wind and smooth sea, we arriving at our first station about sunset. This was an island two miles in length, reduced by the sea to a ledge. At this place we had little hope of finding Harlequins, as I was told that there was but a single 'gutter' here, where the birds had been found with any regularity. Our objective point was an islet lying half a mile away which I was assured was the chief resort of these birds in this vicinity ten years earlier, when they could always be found, in winter around a particular arm of water or gutter, formed at low stages of the tide, on the outermost and roughest part of the islet.

For several days following we were greatly hampered in our movements by stormy weather, and not until the morning of Feb. 6 did we see our first Harlequins. On this morning the wind and sea were quite calm, the tide at about one hour of flood at sunrise, making the little niche alluded to a steep-sided, narrow cove into which the sea was but gently breaking. Very shortly after sunrise we saw a flock of eight Harlequins heading for it, with a swift, straight flight, and without a pause they dropped into the surf near it. We had already left the place, and witnessed this flight from a distance, but we quickly returned, and fastening our boat crept forward over and among the ragged rocks until we saw them

plainly, when we paused to watch them. They were well into the gutter, in a compact group and evidently had just finished feeding, as they now commenced drifting out, resting on the water as lightly as gulls. One would rise on its tail to flap its wings and settle back to shake its plumage, when the act would be repeated by another, the whole flock turning around and around, in a leisurely way, with such perfect ease that no effort was appreciable.

Before we were within gun-shot, a Black-backed Gull came high in the air, and as quickly as his sharp eye beheld us, he gave two or three guttural notes, whereupon every duck leaped to wing and without a pause flew directly back over the route by which they came, fading from view in the distance. From the course they had followed we had no doubt, that they had been driven from an isolated ledge lying two and a half miles to sea, by a lobster man whom we saw, and that they returned to it. And from the fact, that we found none of them around these islands, and that the lobstermen living here and passing the islet several times each week had seen but one flock of seven birds during the winter, I am confident that they were located at this ledge. On account of its exposed position, and lack of good landing places, we may hope that they are secure for some time to come.

The day was so calm that we decided to move to the next islands, two ledgy masses lying five miles to the eastward. Both were destitute of trees and shrubs, the largest, about seventy acres in extent, being the headquarters of two parties of lobster-fishers, whose hospitalities we were glad to accept, as there was no shelter for our tent. Shortly after noon the wind breezed from the southwest and increased steadily throughout the afternoon. The following morning we found a gale blowing from the same point, and the sea breaking a hundred yards from the tide mark. Just above the demolishing force of the waves great windrows of sea froth, charged with a gray slime were heaped, often rolling before the wind, or breaking into fragments and flying. Several times I was buried to the shoulders in the driven mass. When this reached the snow line, the water was quickly absorbed leaving the scum at the surface. A few hundred yards from the windward shore of the 'Big Island'

was a ledge submerged at high water, but at low stages of the tide connected with the island by a line of rocky reef. Thus a small bay was formed, several acres in extent, having at high tide a considerable depth, except at its edges, where its great billows were breaking during the period of high water.

At about 9 A. M. we saw a flock of not less than thirty Harlequins in this bay. Though they were beyond gunshot of the shore, I had ample opportunity to watch them, as they remained until about 3.30 P. M., when the tide was so low that the sea broke before entering the bay. Near at hand were numbers of Eiders and Scoters, rendering comparison easy.

The Harlequins were attracted to the largest billow, one which surged high and sharp, and broke about fifty yards from the reef where its force was spent. For considerable intervals the ducks would sit facing the wind, but not advancing, slightly removed from the fury of the breaker. Then drawing nearer to it they would dive to feed. Frequently all would be under at once, but this diving seemed to depend slightly on the action of the sea, as a portion of the flock, apparently not ready to dive on being threatened by a breaker, would plunge into it, only to rise after some time had elapsed. After a few plunges they would rest on the surface of the water, usually in the path of the great breaker, apparently in mere wantonness. Now they were in little groups scattered parallel with the length of the wave, awaiting the rushing flood. From my position I could not observe the slightest sign of concern in them as it approached. As it rushed over the inequalities of the bottom its crest began breaking at corresponding intervals. High above them it topped, and as its crest broke in white foam, the little ducks plunged headlong into its front, almost instantly reappearing in its train, while perhaps others a few feet from them, with unerring calculations, would ride over an unbroken part as lightly as bubbles. It was here that this beautiful lightness of body was shown to be an important feature in their economy.

In all the time that I watched them none plunged into the breaker until its crest was foaming. At this pastime they spent considerably more time than they had in feeding, and when seemingly satisfied they swam to a smooth position to rest facing

the wind, or a few would pay a visit of inspection to the Eiders and Scoters, quickly returning to their own kind. Then all would return to feed or frolic in the breaker.

The following day the wind and sea were sufficiently moderated to make landing on the little island possible, an opportunity which we improved early in the day. This island, I was told, formerly afforded the birds a favorite resort, and many crevices were pointed out to me as their old-time haunts. On this occasion we found but a single flock of nine birds, resting idly on the water, off the mouth of one of these crevices. We waited for some time, but they drifted farther out.

The next morning, February 9, was very calm and we went to a large off-lying ledge a mile away and set decoys for ducks. Shortly after sunrise a pair of 'Ladies' came and lit in a shallow cave, where they paused but a moment, and then flew away. About half an hour later a grand flock of thirty or forty came in sight heading for us, but when about a hundred yards away, for some cause they sheered off to the west, disappearing in the distance, not stopping at either of the islands. As they passed us away from the sun, the light was perfect, making the adult males, which constituted a good portion of the flock, very conspicuous. The flock was compact, the birds moving swiftly, about ten feet above the water, with very quick wing strokes, their dashing manner and lightness of flight suggesting *Passerine* birds.

Shortly before noon of the same day we went to the little island and again found the nine birds at the same place where they had been observed the day before, this time very close to the gutter. They were warned of our presence by a Black-backed Gull, not, however, before we were within a very long shot of them and five fell at a single discharge. All appeared to be young males, in changing plumage. An example now at hand has the worn and faded feathers of the old dress, and the fresh, bright ones of the new showing in various parts of it, but most conspicuously in the upper tail-coverts and the tail, where the contrast is great. The two middle tail-feathers and upper tail-coverts, except three feathers scattered among the new, are of the new plumage, unworn and of a glossy blackish, while the

rest of the tail and the rump are of the old plumage, worn and faded to a dull, grayish brown shade.

Compared with the other ducks of this coast, with which their habits often throw them in life, the combination of small size, dark color and buoyancy, in air or water, is distinctive. *Somateria* and *Oidemia* are heavy, at rest or in flight, though none but small examples of *O. americana* approach *Histrionicus* in size. The color is at once sufficient to distinguish it from *Clangula hyemalis*, when they are together on this coast.

Mr. Rackliff pointed out numerous gutters, where he said that when a youth he had seen the 'Sea-mice' crowding in, when sad havoc was often made among them by the boy gunners. The older gunners seldom made effort to take them, as they were of small value. They were very easily plucked of their feathers, a fact which made them an object of playful contests at the plucking of the day's gunning.

In speaking of these birds he commonly called them Sea-mice; and in answer to my question, said that they made a squeaking note like mice, and thus received that name among the gunners of that vicinity. He also said that they were very playful in their actions, frequently flying in to a chosen resort to drop into the water and, without a decided stop, resume their flight to another quarter; or they would fly in and dive from the air, reappearing on the wing and away again. (For another note on their playfulness, see Dutcher, *Auk*, Vol. III, p. 434.)

The birds are known to fly to a great height. (See Pennant, Latham, and Wilson.) This is a habit probably not observed on this coast in winter, and might be doubted by those observing only the winter birds; fortunately, however, Audubon has shown that this is a habit in flying over the land, under which conditions they were probably observed by Pennant or his observers.

That the species is gregarious under favorable conditions is ably attested. (Audubon, Elliot, and Stejneger.) I believe that I am correctly informed concerning its voice, at least during its abode on this coast.

As to its breeding on the coasts of Maine and Nova Scotia in early days I have no more evidence than other ornithologists, but as regards the subject of breeding and family cares, I regard

Audubon's account of this species as delightfully accurate. Of published information relating to this species in Maine, that of "W. B." appears to be the most comprehensive, namely: "The Harlequin Duck is regularly common in winter on the coast of Maine, where, however, its distribution seems to be very local." (Bull. Nutt. Orn. Club, VIII, p. 163.) To which I would add: Common only to the eastern half of the coast, where it is steadily but slowly decreasing.

Finally, I believe that there are three things favorable to this bird's holding its range: (1) The lateness and severity of the season when it is here. (2) The roughness and inaccessibility of the places to which it is now restricted. (3) The abundance and vigilance of the Gulls.

SOME NOTES ON THE PASSENGER PIGEON (*ECTOPISTES MIGRATORIUS*) IN CONFINEMENT.

BY RUTHVEN DEANE.

IN THE 'American Field' of December 5, 1895, I noticed a short note, stating that Mr. David Whittaker of Milwaukee, Wis., had in a spacious enclosure, a flock of fifty genuine Wild Pigeons. Being much interested of late in this bird, I at once wrote to Mr. Whittaker, asking for such information in detail regarding his birds as he could give me, but owing to absence from the city, he did not reply. Still being anxious to learn something further regarding this interesting subject, I recently wrote to a correspondent in Milwaukee, asking him to investigate the matter. In due time I received his reply, stating that he had seen the Pigeons, but that the flock consisted of fifteen instead of fifty birds, and inviting me to join him, and spend a few hours of rare pleasure.

On March 1, 1896, I visited Milwaukee, and made a careful inspection of this beautiful flock. I am greatly indebted to Mr. Whittaker, through whose courtesy, we saw and heard so much of

value and interest, not only in regard to his pet birds, but also about his large experience with the Wild Pigeon in its native haunts; for being a keen observer of nature, and having been a prospector for many years among the timber and mining regions of Wisconsin, Michigan and Canada, his opportunities for observation have been extensive. In the fall of 1888, Mr. Whittaker received from a young Indian two pairs of Pigeons, one of adults and the other quite young. They were trapped near Lake Shawano, in Shawano County in northeastern Wisconsin.

Shortly after being confined, one of the old birds scalped itself by flying against the wire netting, and died — the other one escaped. The young pair were, with much care and watching, successfully raised, and from these the flock has increased to its present number, six males and nine females. The enclosure, which is not large, is built behind and adjoining the house, situated on a high bluff overlooking the Milwaukee River. It is built of wire netting, and enclosed on the top and two sides with glass. There is but slight protection from the cold and the Pigeons thrive in zero weather as well as in summer. A few branches and poles are used for roosting, and two shelves, about one foot wide and partitioned off, though not enclosed, are where the nests are built and the young are raised. It was several years before Mr. Whittaker successfully raised the young, but by patient experimenting with various kinds of food, he has been rewarded. The destruction of the nest and egg, at times by the female, more often by others of the flock, and the killing of the young birds, after they leave the nest, by the old males, explains in part the slow increase in the flock. When the Pigeons show signs of nesting, small twigs are thrown on to the bottom of the enclosure, and on the day of our visit, I was so fortunate as to watch the operations of nest building. There were three pairs actively engaged. The females remained on the shelf, and at a given signal which they only uttered for this purpose, the males would select a twig or straw, and in one instance a feather and fly up to the nest, drop it and return to the ground, while the females placed the building material in position and then called for more. In all of Mr. Whittaker's experience with this flock he has never known of more than one egg being deposited. Audubon in his

article¹ on the Passenger Pigeon says: "A curious change of habits has taken place in England in those Pigeons which I presented to the Earl of Kirby in 1830, that nobleman having assured me that ever since they began breeding in his aviaries, they have laid only one egg." The eggs are usually laid from the middle of February to the middle of September, some females laying as many as seven or eight during the season, though three or four is the average.

The period of incubation is fourteen days, almost to a day, and if the egg is not hatched in that time, the birds desert it. As in the wild state, both parents assist in incubation, the females sitting all night, and the males by day. As soon as the young are hatched the parents are fed on earth worms, beetles, grubs, etc., which are placed in a box of earth, from which they greedily feed, afterwards nourishing the young in the usual way, by disgorging the contents from the crop. At times the earth in the enclosure is moistened with water and a handful of worms thrown in, which soon find their way under the surface. The Pigeons are so fond of these tidbits, they will often pick and scratch holes in their search, large enough to almost hide themselves.

When the birds are sitting during cold weather, the egg is tucked up under the feathers, and the primaries of one wing are drawn under the body as though to support the egg in its position. At such times the Pigeon rests on the side of the folded wing instead of squatting on the nest. During the first few days, after the young is hatched, to guard against the cold, it is, like the egg, concealed under the feathers of the abdomen, the head always pointing forward. In this attitude, the parents, without changing the sitting position or reclining on the side, feed the squab by arching the head and neck down, and administering the food. The young leave the nest in about fourteen days, and then feed on small seeds, and later with the old birds subsist on grains, beech nuts, acorns, etc.

The adults usually commence to molt in September and are but a few weeks in assuming their new dress but the young in the first molt are much longer. At the time of my visit the birds

¹ The Birds of America, original edition, Vol. V, 1842, p. 32.

were all in perfect plumage. The young in the downy state are a dark slate color.

The Pigeons are always timid, and ever on the alert when being watched, and the observer must approach them cautiously to prevent a commotion. They inherit the instincts of their race in a number of ways. On the approach of a storm the old birds will arrange themselves side by side on the perch, draw the head and neck down into the feathers and sit motionless for a time, then gradually resume an upright position, spread the tail, stretch each wing in turn, and then, as at a given signal, they spring from the perch and bring up against the wire netting with their feet as though anxious to fly before the disturbing elements. Mr. Whittaker has noticed this same trait while observing Pigeons in the woods.

It was with a peculiar sense of pleasure and satisfaction that I witnessed and heard all the facts about this flock, inasmuch as but few of us expect to again have such opportunities with this Pigeon in the wild state. It is to be hoped that, if Mr. Whittaker continues to successfully increase these birds, he will dispose of a pair to some of our zoölogical gardens, for what would be a more valuable and interesting addition than an aviary of this rapidly diminishing species.

NOTES ON THE BIRDS OF BERMUDA.

BY D. WEBSTER PRENTISS.

BULLETIN 25 of the United States National Museum, on the Natural History of Bermuda, contains some remarks on Bermudian Birds. Since its publication in 1884 two species have been added to the Bermudian Fauna, namely the Mockingbird and the European Goldfinch.

1. *Mimus polyglottos*.—Six pairs of the American Mockingbird were liberated at St. George's in 1893, by Capt. Myers, the German Consul. I have not seen any of them in the neighborhood of Walsingham, but from

the climate, and habits of the bird, there seems to be no reason why in a few years, it should not be as abundant as its near relative, the Catbird, now the most abundant bird on the island, except the English Sparrow.

2. *Carduelis carduelis*. The EUROPEAN GOLDFINCH.—A number of these birds escaped from a vessel at St. George's in 1893, and have multiplied rapidly, until now they are quite common about Walsingham and Poynter's Vale. Have seen a flock of twenty-five or thirty. They make a very attractive addition to the Bermudian Fauna.

It may be of interest to note the six common resident birds of Bermuda, which include about the only birds seen in the winter.

1. *Vireo noveboracensis*. WHITE-EYED VIREO.—Called "Chick of the Village." Very common and very familiar, coming about the house on the rose-bushes and arbors, as also do the Catbirds. A 'Chick' flew into my room through the open door a few days since, and I caught it at the window. It seemed quite fearless and pecked at my finger, as I smoothed it before giving it its liberty. They are in full song during the winter.

2. *Cardinalis cardinalis*.—Very common and fearless. They come into the chicken yard when the chickens are fed and contest with the Sparrows for a portion of the meal.

It is a beautiful sight to see them hopping about the green lawn, together with Bluebirds and Catbirds, and would be still more attractive but for the presence of the ubiquitous English Sparrows. The Redbirds began calling about the middle of February, and now, March 1, are heard in all directions. The note is a little different from that of birds about Washington, D.C., being less robust. There are two distinct whistles—the *Wee-do, wee-do, wee-do*, and the *Phée-a, phée-a*—the latter quite plaintive.

3. *Sialia sialis*.—The Bluebird is also very abundant, but I am told not so much so as formerly. No reason is known for the decrease in numbers unless it is that their nests are broken up and the young destroyed by the English Sparrows. It is possible also that the tree rats (*Mus tectorum*), which build their nests in trees may destroy the eggs and young of the Bluebirds. The notes of the Bluebird also differ from those in the States. They have a general similitude but are not so low, are plaintive and more varied.

I am told by Mr. U. S. Peniston that the Bluebird gives notice of the approach of a hawk by a peculiar long drawn whistle, and that chickens hearing it scurry to shelter. The Bluebirds seem rather smaller than in the States, and the colors deeper.

4. *Galeoscoptes carolinensis*.—The Catbird is everywhere;—along the roads, in the gardens, coming fearlessly to the porches; in the myrtle thickets—in short, ubiquitous. It is not so much of a favorite as the others mentioned, perhaps on account of its sober colors, but

more because of its depredations on small fruits, especially the Loquat plum. Its note, the 'mew,' is also less vigorous than that of the American bird—is more quiet and subdued. They are not yet in song (March 1).

5. *Columbigallina passerina*.—The Ground Dove is also very abundant, being constantly seen feeding along the roads. It is more timid than the birds previously mentioned, but when feeding in the old fields, one can walk quite close to them without their taking alarm.

6. *Passer domesticus*.—The English Sparrow is as aggressive, offensive and despised here as in the States. They were introduced some years ago and in a climate without winter, propagate prodigiously. An attempt was made to check their increase by a bounty for the birds and their eggs of six pence a dozen, but it cost the government so much, £800 in one year, that it was abandoned, while its destruction apparently made no difference in the number. They are most cordially hated by the Bermudians for several reasons:—they foul the eaves and verandahs of the houses, eat up the chicken feed, destroy the fruit—especially grapes and the Loquat, and last but not least, antagonize the native birds. I have been told of instances of their taking possession of the hole occupied by Bluebirds and destroying the rightful occupants.

Fortunately the Sparrows do not rest much on the roofs of houses, or they would pollute the water supply. The Bermudians depend entirely upon rain water for their supply. The houses are tiled with thin slabs of stone and kept white-washed to secure pure water. Birds frequenting the roofs would be very objectionable.

I have seen no domestic pigeons here though I believe there are a few in Hamilton.

7. As another nuisance ornithologically may be mentioned the Crow—introduced some twenty years since. They became very numerous and did so much damage to the crops, especially the Indian corn, and by killing young ducks and chickens, that a bounty of half a crown (60 cts.) was put on their heads. This has almost exterminated them—a small flock of five in the neighborhood of Walsingham being all that remains.

8. The Kingfisher (*Ceryle alcyon*) presents a familiar and handsome appearance, especially around the shores of Harrington Sound. The bird however is not a favorite. The squid is the best bait for fishing and are very scarce. I heard a fisherman charge the scarcity to the Kingfishers—they being especially fond of squid. So also in the Aquarium of beautiful fish—angel fish, turbot, parrot fish, etc., at Mrs. Allen's at Flatt's Village. Many young fish of these species were added, but were said to be eaten by the Kingfishers. Perhaps the latter, however, were not wholly to blame, for one morning a Blue Heron was found perched reflectively over the pond.

9. Lastly permit me to mention the picturesque Tropic Bird (*Phaethon flavirostris*), a prominent and interesting feature of the landscape, from the first of March until October, with its single long tail feather, dashing

and wheeling over the waters. They were formerly greatly more abundant, but from the wanton destruction both of the birds and eggs, their numbers are much reduced. Now, however, the destruction of both birds and eggs is forbidden by law, and it is to be hoped they will again become numerous. This year the advance guard arrived February 28,—rather earlier than usual. On this date I saw them for the first time at the 'Ferry' between the islands of Hamilton and St. George; forty or fifty were circling around and examining the rocky cliffs as though selecting their breeding places. The Tropic Bird is popularly called the 'Bo'sin Bird.'

RECENT LITERATURE.

Stone on the Molting of Birds.¹—In this paper the author has given the results of considerable personal work and experience. The paper consists of two parts, the first being "a general account of the methods of plumage change," and the second, "brief accounts of the molts and seasonal plumages of most of the smaller land birds of eastern North America, from the Cuckoos through the Passeres in the order of the American Ornithologists' Union Check List." The trouble attending the bringing together of even an incomplete series, and consequent difficulty in determining the exact changes occurring in many plumages, are duly set forth, and our author is careful to state that "no doubt alterations will have to be made in my accounts of the molt in several species, in the light of future investigations." Under 'Change of Color by Abrasion,' and 'Direct Change of Color in Feathers,' the results of investigations made with the assistance of Dr. A. P. Brown are given, with illustrations. The changes of plumage in the Snow Bunting, Dunlin and Sanderling are pointed out and commented on, this work having been done without knowledge of Mr. Chapman's recent efforts in the same line. The views of Mr. Chapman are fully indorsed and those of Herr Gätke correspondingly disproved. The only instance known to our author "of an actual change of color in the plumage, except by fading, is in the case of certain delicate pink tints on the breasts of gulls." Certain opinions of Drs. Stejneger and Sharpe regarding the changes of color in *Motacilla lugens* and *Zanthopygia narcissina* and

¹The Molting of Birds with Special Reference to the Plumages of the Smaller Land Birds of Eastern North America. By Witmer Stone. Proc. Acad. Nat. Sci. Phila., 1896, pp. 108-167, pll. iv and v.

Z. tricolor are also given, commented on, and to some extent controverted.

The bulk of this paper of 59 pages is taken up with statements and discussions of the plumage conditions and molts of 135 species belonging to 22 families of our commoner land birds. In some, a line or two suffices for the purpose, to others considerable space is devoted, while in the cases of the Rose-breasted Grosbeak and Scarlet Tanager, several pages for each are given up to original and extremely interesting descriptions of the various plumage phases assumed by these birds. Under 'Order of Molt' the sequence of the growth of new feathers and also the wearing, are not only well discussed but are well illustrated by seventeen figures in two plates.

Mr. Stone tabulates the results of his investigations under six generalizations as follows:— "I. The annual molt at the close of the breeding season is a physiological necessity and is common to all birds. II. The spring molt and striking changes of plumage effected by abrasion are not physiological necessities and their extent is dependent upon the height of development of coloration in the adult plumage, and does not necessarily bear any relation to the systematic relationships of the species. III. The amount of change effected in the plumage at any particular molt varies considerably in different individuals of the same species and sex. IV. Some species which have a well marked spring molt in their first and second years may discontinue it afterwards, when the adult plumage has once been acquired. And, on the other hand, some individuals may continue to molt in the spring, while others of the same species cease to do so. V. The remiges are molted less frequently than any other part of the plumage. As a rule, they are only renewed at the annual molt (exception, *Dolichonyx*). VI. Variability in the order of molt in the remiges and presence or absence of molt in the flight feathers at the end of the first summer are generally family characters," etc. Objections might be made to some of the above. Thus, *Spinus tristis* and *Ammodramus sandwichensis savanna* are equal, in the adults at least, in the extent of the spring molt, but the change is hardly "dependent upon the height of development of coloration in the adult plumage," for in one a total change of color takes place, whereas in the other there is little more than a replacement of feathers by others of the same color. Again, has our author seen a sufficient number of specimens of molting second year birds of undoubtedly correctly determined age, to warrant the statement that they have a "well marked spring molt?" Also, when some individuals of a species molt in the spring and others do not, is it not because the former are immature and the latter adult?

With such an extensive self-imposed task and the necessarily large amount of material and conditions examined, it would be perhaps too much to expect that our author would always 'hew to the line,' but the lapses detract little from the merits of this important paper on a hitherto almost neglected branch of American ornithology. Most of those that do

occur are due to lack of complete series showing all grades of changes and which in many cases were not seen by the writer, or still remain to be collected before one can be sure of knowing how and when changes occur. If collectors would save their worn and molting specimens instead of throwing them away as 'worthless,' changes of plumage would be far better known.

Our author's selection of the words, "first winter, and nuptial," to indicate certain conditions of plumage seems unfortunate, for several reasons. In some cases "nuptial" indicates a plumage condition and colors, obtained wholly by wearing, in others the same word designates plumages obtained partly or entirely by molt, and again in others by a combination of molt and wear. All birds have these seasonal changes, yet differ in the process and time of changing; therefore it would seem that a better formula is necessary by which to designate those instances where the same seasonal comparative conditions are obtained by entirely different physiological processes. These words are used for such birds as *Spinus tristis* which has a double molt, and also for *Plectrophenax nivalis* which has but one; also for *Junco hyemalis*, *Melospiza fasciata*, *Scolecophagus carolinus*, *Cistothorus palustris*, and others, which differ considerably not only in the nature and extent of the molt, but also as to the time of plumage change; and the matter is further complicated by the fact that the immature birds of many species molt at different times from the adults, some in the fall, others in the spring, even differing as to the parts of the plumage affected. For instance, the young Song Sparrow obtains a new tail in the fall. One specimen taken Sept. 13, another taken Nov. 6, have new central feathers, and I have watched a live one completely renew its tail. A *Cistothorus palustris* on April 15, is molting all except the remiges and the tail is half grown. A Savanna Sparrow, May 6, is similar, but the outer rectrices are still in place and most of the secondaries and tertials have been renewed. Two Henslow's Sparrows, same date, have the central tail-feathers just appearing; in one ten, in the other seven old feathers are still in place. Two Indigos, Sept. 1, and Oct. 2, have not only molted their tail-feathers but have also nearly completed the new wing feathers. All the above are immature birds, and the Henslow's are molting nothing except the tail. It is hardly safe to say that these nestling rectrices were lost by accident.

No mention is made of the spring molt of immature *Agelaius phoeniceus*. In the female this is one of the least extensive of our birds, being confined to the throat, around the eyes and along the superciliary stripe. Under *Dendroica caerulescens* occurs a *lapsus calami*, where our author speaks of the white edging of the throat feathers of "fall adults." These are birds of the year, as is readily proved by their osteology.

Much work remains to be done before we can understand the changes and conditions of even our most common birds; the difficulty is great and success uncertain, owing chiefly to the fact that no individuals as such are resident with us but migrate extensively.

Mr. Stone deserves great credit for the present paper, which is a good basis on which to build a better knowledge of plumage changes. Such work is tending rapidly to disprove the many guesses formerly so common but now gradually being displaced by the results of unbiased, systematic study.—W. P.

Stone on Birds collected in North Greenland.¹—Mr. Stone gives an annotated list of the birds "obtained by the Peary party during their sojourn in North Greenland from July, 1891, to August, 1892, and also of those collected by the Relief Expedition of 1892." They consist of 122 specimens, besides numerous nests and eggs, part of which were collected by Mr. Langdon Gibson in the vicinity of Peary's winter quarters, and the remainder by Mr. Charles E. Hite, at various points from Disko to Cape York. The two collections number 19 species each, and collectively represent 28 species, only a part of the species being common to both collections. The annotations give the localities, and generally the dates, of the specimens obtained, with occasionally further notes of interest. No species are added to the Greenland fauna, but the breeding grounds of *Chen hyperborea nivalis* appear to be for the first time here made known.—J. A. A.

Schalow on a Collection of Birds from West Greenland.²—In 1892 the Geographical Society of Berlin sent an expedition to West Greenland, under the direction of Dr. von Drygalski, which was accompanied by Dr. Vanhöffen as naturalist. The region explored extends from latitude 69° to 73°, and the expedition remained in the field from May, 1892, to October, 1893. The birds collected number 29 species, of which 12 are represented only by eggs. Dr. Schalow, in his report upon this collection, includes also notices of a number of additional Greenland birds' eggs contained in the collection of Major Krüger-Velthusen; some 35 species are thus formally noticed, with passing remarks on a number of others. Many field notes are given, apparently extracted from Dr. Vanhöffen's previously published observations,³ with many technical notes on various species. While the collection gathered by Dr. Vanhöffen added no species to the Greenland fauna he reports seeing a skin of *Tadorna casarca* [= *Casarca casarca* (Linn.)] in a small collection of bird's skins made at Augpalartok, in the District of Upernavik, which was collected

¹ List of Birds collected in North Greenland by the Peary Expedition of 1891-92 and the Relief Expedition of 1892. By Witmer Stone. Proc. Acad. Nat. Sci. Philadelphia, 1895, pp. 502-505.

² Ueber eine Vogelsammlung aus Westgrönland. Von Herman Schalow. Journ. für Orn., Oct., 1895, pp. 457-481.

³ "Frühlingsleben in Nord-Grönland (Verhandl. Ges. für Erdkunde zu Berlin, XX, 1893, pp. 454-469)."

in that vicinity in 1892. Dr. Schalow thinks it could not have been derived by exchange from any foreign source. Besides, in that same year several specimens of this southeastern species were taken in Iceland; it has also been taken repeatedly in Sweden and Norway, and there seems to be also still another record for North Greenland.¹

Dr. Schalow also incidentally notes the fact of the occurrence of *Anser segetum* [= *Anser fabalis* (Lath.) Salvad.] in North Greenland, as recorded by Winge,² who reports a Greenland specimen as existing in the Zoölogical Museum of Copenhagen. This adds two Old World species to the Greenland fauna in addition to those given in the A. O. U. Check-List.—J. A. A.

Rotzell's Birds of Narberth, Pa., and Vicinity.³—This is a briefly annotated list of 108 species. It does not profess to be a complete list of the birds of the limited area of which it treats, but is excellent as far as it goes, giving briefly just the information most desired in a local list. It includes only such species as have been personally noted by the writer, and forms a good point of departure for further additions, which the author solicits aid in making. He says that he has "refrained from recording any except those that are well authenticated, preferring that future observations should add to the list rather than take from it"—a rule compilers of local lists would do well to always follow. The list is printed with good taste and presents an attractive appearance.—J. A. A.

Rhoads's List of Tennessee Birds.⁴—Mr. Rhoads's list is not limited to the species observed by him during his recent trip through the State (in May and June, 1895; see Proc. Acad. Nat. Sci. Phila., 1895, pp. 376-380), but is intended to comprehend all the birds of which we have any record as now inhabiting or formerly occurring in the State." The literature bearing on the subject is scanty, consisting chiefly of Dr. W. H. Fox's two papers, recording 116 species, a fragmentary list by Dr. F. W. Langdon, and some notes on the birds of the Great Smoky Mountains by 'Lemoine,' numbering altogether 134 species and sub-species. This number is increased by Mr. Rhoads to 215, of which "10 are of doubtful record or identity, although they all belong to the Tennessee fauna."

¹ Winge, Vidensk. Meddel. naturh. Foren. Kjobenhavn, 1895 (p. 63 of author's separata).

² *Ibid.*

³ Birds of Narberth, Pa., and Vicinity. — By W. E. Rotzell, M.D. — 1895. 800, pp. 8.

⁴ Contributions to the Zoölogy of Tennessee, No. 2. Birds. By Samuel N. Rhoads. Proc. Acad. Nat. Sci. Philadelphia, 1895, pp. 463-501. (December 11, 1895.)

Although the list includes no species whose occurrence in Tennessee is improbable, it is to be regretted that Mr. Rhoads should not have been content to record not only the "10 of doubtful record," but a few others also, as species of probable occurrence, without including them and numbering them as a part of his list. He could have given the evidence in such cases 'for what it may be worth,' and thus have saved giving to his list, to say the least, a very unscientific flavoring. So many such inclusions render it very far from a 'hard-and-fast' list. In fact we are surprised to see a writer of Mr. Rhoads's scientific ability and experience setting such a bad example in the matter of a local list.—J. A. A.

Short's Birds of Western New York.¹—Mr. Short's former list (see Auk, XI, 1894, p. 168), published in 1893, contained 207 species, one of which is here omitted, and to which 23 are now added, giving a total of 229 species in the present edition. The annotations respecting the rarer species are brought down to date. The typographical execution has been greatly improved, the list being for the most part neatly arranged and printed; towards the close the compositor seems to have run short of type, supplying the deficiency, in certain letters, from a smaller font. The list has evidently been prepared with care, and may doubtless be regarded as a trustworthy enumeration of the birds of the region to which it relates.—J. A. A.

A List of Nebraska Birds.²—This paper is primarily designed to give the residents of Nebraska some knowledge of the distribution, comparative numbers, and economic value of the birds which occur in their State. An opening chapter, 'Remarks about Birds in general,' treats of their relation to man and of their economic and esthetic importance. The list proper includes brief annotations on distribution and manner of occurrence, with, in some cases, remarks on the bird's food and its value to the agriculturist. Herein are recorded 415 species and subspecies. Of these *Xema sabinii*, *Sterna paradisæa*, *Tantalus loculator*, *Ammodramus caudacutus nelsoni*, *Sitta pusilla* and *Merula migratoria propinqua*, seem to have been introduced on insufficient evidence, while *Quiscalus quiscula*, *Acanthis linaria rostrata*, *Junco hyemalis oregonus*, *Lanius ludovicianus*, *Seiurus noveboracensis* are included as a result of evident misidentifications. Subtracting these eleven birds and we have

¹ Birds of Western New York. With Notes. By Ernest H. Short. Second Edition, 1896. Frank H. Lattin, Publisher, Albion, N. Y. 8vo, pp. 20.

² Some Notes on Nebraska Birds. A List of the Species and Subspecies Found in the State, with notes on their distribution, Food-Habits Etc. Corrected to April 22d, 1896. By Lawrence Bruner, Professor of Entomology and Ornithology, University of Nebraska. Rep. Nebraska State Horticultural Society, 1896, Lincoln, Neb. pp. 48-178, 51 cuts in the text.

left at least 400 species and subspecies, a larger number than has been recorded from any other State, except California, and nearly three-fourths of the total number of birds known from the Mississippi Valley. This unusually rich avifauna, as Professor Bruner remarks, is due both to the faunal position of Nebraska and to its diversified topography. — F. M. C.

Cory's 'Hunting and Fishing in Florida,' with 'a Key to the Water Birds of the State.'¹—The strictly ornithological portion of the work, or the 'Key,' consists of pages 133–304, and is limited to a consideration of the Water Birds of Florida, beginning with the Grebes and ending with the Plovers. It is profusely illustrated with process cuts in the text, most of them very effective and pleasing, but a few show that they were made from specimens that were defective in respect to taxidermy. The key proper consists of a cut of the head (and sometimes of other parts, as the foot) of each genus treated with a few lines of text to each species, in which the distinctive characters are emphasized by the use of heavy type, followed by a reference to the page where the bird is later more fully described. What may be called the key proper, with its accompanying cuts and diagrams, occupies about fifty pages, and is followed by a descriptive list of the species, consisting of a brief but apparently sufficient diagnosis of each, and a short paragraph on the character of its occurrence in Florida. Nearly every species mentioned is illustrated with a cut of the head, often of both male and female where the sexes differ, or by a full-length figure, all original and prepared expressly for the present work. Says the author: "In preparing the present Key, I have striven to make it as simple and non-technical as possible, my object being to enable any one totally unfamiliar with birds to identify with comparative ease any species of Florida water-bird." Apparently his effort to make the way easy, even for the novice, should be successful.

Preceding the bird part is a chapter devoted to the snakes of Florida, in the form of a copiously annotated list. There is also an annotated list of the mammals of the State, evidently prepared with much care, in which we note that the Florida panther is characterized as a

Hunting and Fishing | in | Florida, | including a | Key to the Water
Birds | known to occur in the State. | By | Charles B. Cory. | Curator of the
Department of Ornithology in the Field Columbian Museum, Chicago;
Fellow of the | Linnaean and Zoölogical Societies of London; Member of the
American Ornithologists' | Union; of the British Ornithologists' Union;
Honorary Member of the | California Academy of Sciences, etc., etc. | Author
of | "The Beautiful and Curious Birds of the World," "The Birds | of the
Bahama Islands," "The Birds of Haiti and San | Domingo," "The Birds of
the West Indies," "A Naturalist in the Magdalen Islands," etc., etc. | For
sale by | Estes & Lauriat, | Boston, Mass. | 1896. Sm. 4to, pp. 304, 2 photo-
gravure plates, and about 200 cuts in the text.

new sub-species, under the name *Felis concolor floridana*. About twenty-five pages are devoted to an account of the Seminole Indians, and about one hundred pages to hunting and fishing in Florida. Various hunting and fishing trips are described, with numerous appropriate illustrations. This portion of the book has an important bearing on many points in natural history, and will doubtless be of special interest to the hunter and tourist. The work is beautifully printed and is altogether an elegant sample of book-making.—J. A. A.

Howe's 'Every Bird.'¹—This is another attempt to render the identification of bird easy, whether the birds be in the bush or in the hand. The scope of the volume is limited to "one hundred and seventy-three species of birds most often met with in New England, and the Appendix contains nearly all other birds known to occur within these states." The text is reduced to a minimum, the author depending largely on the outline drawings of head and foot as an aid to the student. A line or two is given to dates of arrival, distribution (in New England), haunts, and song under each species. About a page of space is allotted to each species, including the cuts. They are divided according to their haunts into 'Woodland Birds,' 'Marsh and Swamp Birds,' 'Beach Birds,' 'Ocean Birds,' etc. The book, however, lacks both a table of contents and an index.—J. A. A.

Artistic and Scientific Taxidermy.²—Any work which will aid in more clearly defining the difference between the art of taxidermy and the trade of taxidermy is to be welcomed. Of manuals containing elementary instructions in 'stuffing' we have had enough. The case of effigies over the drawing-room mantel may serve a decorative purpose, but its maker is no more worthy the name of taxidermist than the caster of plaster images is deserving of the title of sculptor.

¹ "Every Bird" | A Guide to the Identification of | the Birds of Woodland, | Beach and Ocean. | With | one hundred and twenty-four line illustrations | by the author | Reginald Heber Howe, Jr. | [Associate] Member of the American Ornithologists' Union, Member of the Nuttall | Ornithological Club. | Boston : | Bradlee Whidden, | 1896. Sm. 8vo, | pp. viii, 192. Price, \$1.00.

² Artistic and Scientific | Taxidermy and Modelling | A Manual of Instruction in the Methods of Pre- | serving and Reproducing the Correct | Form of all Natural Objects | Including a Chapter on | The Modelling of | Foliage | By | Montagu Browne, F. G. S., F. Z. S., etc. | Curator of the Leicester Corporation Museum and Art Gallery ; | Author of 'Practical Taxidermy,' The Vertebrate Animals of Leicestershire | and Rutland, etc. | With 22 Full-page Illustrations and 11 Illustrations in Text | London | Adam and Charles Black 1896. [New York, Macmillan & Co., \$6.50] 8vo. pp. viii + 463.

It is only within recent years that publishers have felt warranted in giving the taxidermist an opportunity to adequately state his case, and the present work is one of the largest and most expensive that has appeared on this subject. The author has a respect for his art born of an evident appreciation of its possibilities. Furthermore his gifts as a writer enable him to present his methods clearly and we opened this sumptuous volume with a hope that it would prove a source of both information and inspiration to the taxidermic artist. But we were grievously disappointed. Mr. Browne claims originality for his methods, and doubtless no one will care to dispute him, but the conservatism which makes him so independent has prevented him from availing himself of the latest advances in his art. As a result his work is, in many respects, several years behind the times. For instance, the aid rendered the taxidermist by photography he considers "usually a great mistake"; for, he asks, with singular narrowness, "Would any taxidermist attempt to reproduce 'Animals in rapid motion' as shown by instantaneous photography?" Nevertheless as specimens of his own work he gives plates of a group of fighting tigers, and a Kestrel in the air, presumably about to strike its prey.

Arsenic is considered "quite useless" as a preservative and as a substitute we are given three formulæ, the first of which includes chalk, soap, chloride of lime and tincture of musk; the second, which is incidentally recommended "as an efficient substitute for snuff," contains tannin, red pepper, camphor, and burnt alum; while the third consists of alum and saltpetre. Finally, and fortunately, a thorough external dressing with alcohol and bichloride of mercury is insisted upon.

The chapter on collecting mammals and birds is doubtless addressed to the sportsman for not one word do we find on the modern methods of trapping which have practically revolutionized the study of mammals, while instead of the convenient and effective auxilliary barrels now used by all our collectors, we are told to secure two rifles and two shot-guns of different calibres.

Pages 107-160 are devoted to the skinning, casting and mounting of mammals, but the methods here recommended of mounting the skin on a cast made from the dead body, the relaxed muscles of which give anything but an accurate reproduction of the animal's form in life, is one that no scientific taxidermist will endorse, while the manner of inserting the tail-wire in the mannikin is, to say the least, primitive. Chapter VI (pp. 166-211) treats of "the skinning and setting-up of birds by various methods." According to our dogmatic author there is but one way of skinning a bird and that is "from under the wing"; to make the opening on the abdomen is denounced as the "practice of some primæval butcher." No absorbent is used while skinning, but plaster, a substance which should never be put on skins designed for study, is employed as a drier after washing. Collectors who, when in the field, are accustomed to shoot and make up from twenty to thirty birds daily, will be interested in Mr. Browne's method of making 'skins.' Each 'skin' should have the skull

filled with chopped tow, and the skull should be afterwards "thinly plastered over with soft clay." "The hollow bags of the wings" should also be filled with cut tow and the leg-bones wrapped with the same material. A false body of tow and wire should now be made, and when, after a complicated process, this has been introduced into the skin, the latter should be placed in a trough, or a paper band or strip may be used, a plan which is considered superior to wrapping in cotton. Of mammal skins, by the way, Mr. Browne has apparently never heard, for we do not find them mentioned in his work.

In mounting birds from skins no mention is made of the most important part of the whole process, that of scraping and separating the shafts of the feathers from the inside whereby the plumage regains much of its former fluffiness. For the rest the author mounts his birds much as do other taxidermists.

The chapters on casting and modelling reptiles, amphibians, and fishes, and on the reproduction of certain invertebrates, contain information which has not previously appeared in works on taxidermy, though the methods given are in use in similar or improved form by our leading taxidermists and modellers.

Chapter IX, on casting and modelling from natural foliage, flowers, etc., is largely based on the methods of Mr. J. H. Mintorn and Mrs. E. S. Mogridge, whose work is so well and so favorably known in this country. As such it will be welcomed by all taxidermists who appreciate the value of a proper setting for their work.

The excellence of this chapter gives us reason to regret that Mr. Browne did not avail himself of the discoveries of his fellow workers in other branches of his art, for while his book may stand as a complete exposition of his own methods and ideas, it can by no means be considered as an adequate treatise on artistic and scientific taxidermy.—F. M. C.

Witchell's 'Evolution of Bird-Song.'¹—Says the author: "However novel or otherwise may be the theories stated in this book, I can at least claim that, so far as I am concerned, they are absolutely original, all of them having been committed to writing, though in some instances, not under their present titles, before I consulted any person, or any book, in regard to them." The subject is treated in ten chapters, under the following headings: The origin of the voice; alarm-notes; the influence of combat; the call-note; the simplest songs; noticeable incidents connected with bird-song; the influence of heredity in the perpetuation of the cries of birds; variation in bird-voices, its cause and effects; the influence of imitation in relation to bird-song. An appendix gives 'Tran-

¹ The | Evolution of Bird-Song | with | Observations on the Influence of Mimicry and Imitation | By | Charles A. Witchell | Author of the Fauna of Gloucestershire | London | Adam and Charles Black | 1896 [New York: Macmillan & Co. Price, \$1.75.] 8vo, pp. x, 253.

scripts of music sung by Blackbirds, Thrushes, and Skylarks,' and a bibliography.

The 'evolution of bird-song' is a subject that easily lends itself to speculation; while there is ample basis of fact for the discussion of many phases of the subject, in some respects the field is open for the free use of the imagination. Our author in the main has held himself in good restraint, but of course many of his suggestions are necessarily founded on conjecture.

After recounting some of the facts regarding the vocal and other sounds emitted by nearly voiceless animals, such as newts, young frogs, serpents and tortoises, and Darwin's theory that voice originated in the involuntary contraction of muscles, through the excitement of fear or anger, he reaches the conclusion that we may consider "the voice to have been evolved from a toneless puffing, indicative of anger, or from snorts or grunts accidentally caused."

Alarm-notes are produced by the anticipation of danger, while further development of the voice is due to the influence of combat, developing notes of defiance or triumph. "The first call-notes of birds were probably mere adaptations of alarm-cries"; the simpler songs of many species were at first mere repetitions of call-notes. Proof of heredity is found in the family resemblances between the notes of allied birds, as the call-notes and songs of thrushes, etc., at points geographically widely separated. "It is probable that, speaking generally, the cries of birds which have limited voices are inherited, and that those of what are commonly called 'singing-birds' are perpetuated through the agency of mimicry"—not only of other birds' notes but of sounds produced by the elements, as "the moaning of the wind in hollow trees," "the murmurs and gurgles of rippling streams," and the sounds made by insects and quadrupeds. These are, in brief, the principal conclusions presented by the author of 'Evolution of Bird-Song.'

Mr. Witchell is beyond question a keen observer of birds in life, and has given a large amount of time to the subject he here attempts to elucidate. The book is well written, and abounds in interesting and suggestive facts derived from the close study of birds in their natural haunts. Here and there, however, a speculative remark or suggestion might well have been omitted, as either too far-fetched or superfluous to his subject. The 'bibliography of the subject', is quite too general and incomplete to be satisfactory, and we miss from it a number of titles one would naturally expect to find in such a list. A reference like the following, for example—"Zoologist, The. A monthly publication, London"—is hardly the kind of bibliography one will be likely to commend who is in search of special papers relating to the 'Evolution of Bird-song.' He appears to have quite overlooked Mr. Samuel N. Rhoads's paper, entitled 'The Mimetic Origin and Development of Bird Language' (Am. Nat. XXIII, March, 1889, pp. 91-103), where he will find his theories and many of his conclusions anticipated by Mr. Rhoads.—J. A. A.

Harvie-Brown and Buckley's 'A Vertebrate Fauna of the Moray Basin.'¹—These two attractive volumes are a credit to any publisher in the excellence of their illustrations and in their typographical execution, while the matter they contain is well worthy of the elegant setting. The first half of Volume I is taken up with a very detailed account of the boundaries, 'water-sheds', and other physical features of the region, and their influence upon 'migration lines,' with numerous full-page photogravure illustrations of beautiful stretches of natural scenery. The next sixty pages are devoted to the Mammals of the region. The Birds naturally come in for a large share of space, occupying pp. 214-306 of Vol. I and pp. 1-228 of Vol. II, or rather more than half of the entire work. There is a colored plate of the chick of Pallas's Sand Grouse (*Syrrhaptes paradoxus*), from a specimen taken in the region under consideration, and various text and full-page photogravure plates, appropriately illustrate this part of the work. Then follows an account of the Reptiles (4 species), and of the Amphibians (5 species). There is also a chapter (Vol. II, pp. 235-286) on 'The Extinct Vertebrate Animals of the Moray Firth Area,' by Dr. R. H. Traquair, illustrated by a number of text figures and nine plates. The work concludes with an 'Analysis of the Mammalian and Avian Fauna, to which are added Notes received since the Lists were printed off' (pp. 288-299). There is also a large colored map of the Moray Basin, and several bird's-eye sketches of the topography of the mountainous districts.

From the 'Analysis' we learn that of the 81 species of mammals found in Great Britain, 42 have been recorded from the Moray Basin area. Of 360-370 species of birds found in Great Britain, 255 are included in the present volumes, which in the 'Analysis' are divided into the various categories of 'residents', regular summer visitants, regular winter visitants, regular autumn and spring visitants, occasional visitants, etc. Of the total of 255 species, 26 are admittedly "recorded on insufficient evidence," but they are distinguished from the others by the entries being bracketed.

The work is evidently the result of much patient research, and the careful sifting of records, many of them MS. notes from more or less well-known local observers, not before published. The subjects have the appearance of being treated exhaustively, and the nature of the presence of many species, which are known to have varied much in abundance and in extent of range within the area in question, is given historically in detail. Thus some twenty-five pages are given to the Osprey, and six to a dozen to various other species.

¹ A Vertebrate Fauna of the Moray Basin. By J. A. Harvie-Brown, F. R. S. E., F. Z. S., etc., and T. E. Buckley, B. A., F. Z. S., etc. David Douglas, Edinburgh, 1895. Two Vols., sm. 4to. Vol. I, pp. i-xiv, 1-306; Vol. II, pp. 1-309. Map and numerous photogravure and other plates, one colored.

In view of the recent introduction of the Starling into this country, the following respecting this bird, which has of late greatly extended its range in the Moray Basin, may be of interest to American readers: "General favorite though he be, it is, in our opinion, a question whether his good qualities may not be found wanting in the balance of good and evil, a result following upon the force of his numbers and degree of assertiveness" (Vol. II, p. 4).

"A Fauna of the Moray Basin" is a model work of its kind, and a most valuable contribution to Scottish natural history.—J. A. A.

The 'Birds' of the Royal Natural History.—Since our previous notice of this work,¹ Parts 21–24 (March 1–April 15) have appeared, completing the portion relating to birds, which occupies pp. 289–576 of Vol. III and the whole of Vol. IV (pp. 1–576). Of Vol. IV there is yet to appear the title page, contents and index, which will be issued with Part 25, otherwise devoted to reptiles.

Chapter XII, 'The Diurnal Birds of Prey, or Accipitrines,—Order Accipitres,' occupies pp. 174–275 of Vol. IV, the one hundred pages devoted to this group sufficing to give a quite full and satisfactory account of these birds. Chapter XIII (pp. 276–288), treats of 'The Cormorant Group,—Order Steganopodes.' Chapter XIV (pp. 289–319) gives an account of the 'Herons, Storks, and Ibises,—Order Herodiones'; Chapter XV (pp. 320–362) is devoted to the 'Flamingoes, Ducks, and Screamers,—Orders Odontoglossi, Anseres, and Palamedæ'; Chapter XVI (pp. 363–392), to 'The Pigeons and Sand-Grouse,—Order Columbæ'; Chapter XVII (pp. 393–450), to 'The Game-Birds and Rails,—Orders Gallinæ and Fulicariæ'; Chapter XVIII (pp. 451–469), to the 'Bustards, Thicknees and Cranes,—Order Alectorides'; Chapter XIX (pp. 470–518), to 'The Plovers, Sandpipers, Jacanas, and Gulls,—Orders Limicolæ and Gaviæ'; Chapter XX (pp. 519–550), to 'The Tube-nosed Birds, Diving Birds, and Penguins,—Orders Tubinares, Pygopodes, and Impennes'; Chapter XXI (pp. 551–576), to 'The Tinamus, Flightless Birds, etc.—Groups Crypturi, Stereornithes, Ratitæ, Odontornithes, Saururæ,' concluding the work. Chapter XII is by Dr. R. Bowdler Sharpe and Chapters XVI and XVII are by W. R. Ogilvie Grant; the authorship of the other chapters here under notice is not as yet disclosed, but is apparently by the editor, Dr. Lydekker.

The commendation bestowed upon the earlier bird parts of this great work is equally well-merited by these concluding numbers, which give in small compass a vast amount of information on the groups treated. The illustrations are excellent and abundant, although only in small part new, yet none the less appropriate and instructive. The relationships and distinctive characteristics of the higher group are briefly considered,

¹ See Auk, XIII, 1896, pp. 156–160.

and the various extinct types are also mentioned. As a popular treatise on the Class Aves, the work as a whole is entitled to generous patronage. — J. A. A.

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GENERAL NOTES.

Name of the Large-billed Puffin.—The A. O. U. Committee (Check-List N. A. Birds, No. 13 *a*) seems to have been misled in quoting Temminck in connection with this bird, and also in citing Stephens, 1826, for the original description. The bird appears to have been first named by Naumann, Isis, 1821, p. 782, pl. 7, fig. 2, credited to Leach. Stephens's Continuation of Shaw's Gen. Zool., as quoted of 1826, XIII, p. 40, I have not verified, but believe the correct citation to be 1825, XIII, p. 40, pl. 4, fig. 2.—ELLIOTT COUES, *Washington, D. C.*

[*Cf. Auk*, XIII, p. 189, April, 1896.—EDD.]

Record of a Fourth Specimen of the European Widgeon (*Anas penelope*) in Indiana.—A fine adult male of this Duck was killed on the marshes of the English Lake Shooting and Fishing Club at English Lake, Indiana, by Mr. John E. Earle of Hinsdale, Ill., on the 23d of March, 1896. It was flying in company with a small flock of Baldpates when shot. Mr. Earle has had it mounted and it is now in his possession. This specimen makes the eighth record for the interior, including the one cited by Mr. Frank S. Wright of Auburn, N. Y., in the 'Ornithologist and Oölogist,' Vol. VII, p. 133, as taken on Lake Cayuga, N. Y., in May, 1880. This record I had previously overlooked. In a recent letter from Mr. Wright he informs me that he still has this Duck in his possession.—RUTHVEN DEANE, *Chicago Ill.*

Recent Occurrence of the Florida Gallinule in Southern Maine.—Two immature male specimens of the Florida Gallinule (*Gallinula galeata*) have recently been taken on the 'Dyke' marsh in Falmouth, near Portland. The first was shot on September 20, 1894, and is preserved in the collection of Mr. W. H. Rich, of Portland. The second was shot on September 30 of the same year, and is in my own collection. Both of these birds were seen by me before they were preserved.—HENRY H. BROCK, *Portland, Me.*

Baird's Sandpiper in Michigan.—In 'The Auk' for April (Vol. XIII, p. 174) I find mention made of the taking of *Tringa bairdii*, Baird's Sandpiper, at Grand Rapids, Michigan, the writer stating that it was the second or third, or perhaps the first ever taken in the State. During the past few months a number of letters have reached me, making inquiries in regard to this bird, to which I wish to make the following reply through 'The Auk.'

In 'Birds of Michigan' by A. J. Cook (second edition), page 59, I find the following: "*Tringa bairdii*. Baird's Sandpiper. This species is embraced in Covert's 'Birds of Michigan.'"

Where the *author, editor, or compiler* got authority for the above statement is to me a question. In 1876 I published a list of Michigan birds; it is not included in this list. In 1878 I prepared a MSS. list; it is not in this list. In 1881 I published my last list, and it is not in this. Will some one tell me where the aforesaid author found his authority for the above statement? Now the fact is, I did kill *Tringa bairdii*, in Michigan, on Aug. 15, 1893,—a male bird, at 'The Over-flow,' four miles east of Ann Arbor, which specimen was presented to Michigan University Museum, and can be seen there at any time.—ADOLPHE B. COVERT, *Ann Arbor, Mich.*

The Belted Piping Plover in Massachusetts.—During a trip to Marshfield, Mass., on April 20, 1896, I started two small Plovers from a sandy beach. They were very wild and difficult to approach but after several attempts I managed to secure one of them.

The bird proved to be a male Belted Piping Plover (*Egialitis meloda circumcincta*), the band across the breast being very dark and well marked. This is the first time I have met with this bird in the spring, although it occasionally occurs during the fall migration.—FOSTER H. BRACKETT, *Boston, Mass.*

Discovery of the Eggs of the Belted Piping Plover.—As I am not aware that the nest and eggs of this species (*Egialitis meloda circumcincta*) have been previously recorded, perhaps the following notes will be of interest to oölogists.

Mr. Oliver Spanner of Toronto after reading 'Bird Nesting in North West Canada' decided to make a trip to Lake Manitoba and while there secured eggs of this species. On June 19, 1895, he found a nest on Birch Island near the west shore of Lake Manitoba. The nest consisted of a depression in the sand lined with bits of drift weed, and contained three eggs which are similar to those of the common Piping Plover; the ground color is pale buff and they are finely spotted with black and purple gray, averaging in size 1.25×1.00 . Both eggs and skin of the parent are now in my collection. Mr. Spanner also obtained young birds in the down at the same time, and as he saw several pairs of these Plovers, together with solitary Sandpipers, no doubt these were nesting in the vicinity.—W. RAINE, *Toronto, Canada.*

Recent Capture of the Golden Eagle near Portland, Maine.—The Golden Eagle (*Aquila chrysaëtos*) is so rare in the neighborhood of Portland that a recent capture should be recorded. I have an adult male specimen, sent to me in flesh, which was shot at Duck Pond, Windham, October 14, 1891.—HENRY H. BROCK, *Portland, Me.*

Golden Eagles in Virginia.—Mr. David N. McCadden, taxidermist at the Philadelphia Academy of Natural Sciences, received three Golden Eagles

from Looney, Craig Co., Va., December 18, 1895, two of which were shipped alive. Mr. J. B. Ruble, who secured the birds, writes the following particulars concerning their capture: "Mr. John Myers, who lives near the top of the mountain here, saw the Eagles feeding on a dead sheep; he set a trap and caught four of them from the one sheep. There are more Eagles in this county than I ever saw before. Mr. John Looney told me that about a week ago he saw thirteen in one flock, and there have been eight or ten in all taken in Craig County this winter." In answer to further inquiry Mr. Ruble writes that he considers that all the Eagles were of the same kind. Gentlemen who have been going down to Craig County for deer, for a number of years past, say that they never heard of any Golden Eagles there before, and Dr. Rives, in his 'Birds of the Virginias,' only gives a few records for this species. The occurrence of the bird in such numbers therefore seems to be well worth recording.—WITMER STONE, *Acad. Nat. Sci., Philadelphia, Pa.*

Nidification of the Dusky Horned Owl.—According to the few records of the eggs of *Bubo virginianus saturatus* in Bendire's 'Life Histories of North American Birds,' it appears that the eggs of this species are very rare and that none have been obtained for many years. Capt. Bendire records a set of two eggs that were taken by Kennicott in Alaska, April 16, 1862, and also another egg taken by H. Connelly in Labrador in 1863.

I therefore have pleasure in recording a set of two eggs that were taken recently. Although I have once or twice received eggs from the North supposed to belong to this species, it was not until last season that I was able to obtain the parent with the eggs. The nest was found by my collector at Sandwich Bay, Labrador, April 17, 1895, and the label says: "The nest was built in a spruce 15 feet from the ground, and made of twigs and coarse grass." The female was shot as she left the nest and is an exceptionally dark specimen. Both eggs with the parent are now in the collection of R. S. Sharples, Esq., of Elgin, Ill.—W. RAINE, *Toronto, Canada.*

Four Winter Records of the Short-eared Owl on the Massachusetts Coast.—I have a female Short-eared Owl (*Asio accipitrinus*) in my collection which was taken at Orleans, near Chatham, Mass., on February 23, 1896, by Mr. Charles J. Paine, Jr.; and I also know of a female (?) taken at Ipswich, Mass., on December 31, 1895, by Mr. Ralph W. Gray; and a male taken at the same locality by Mr. George C. Shattuck on January 1, 1896; also a female taken at the same locality on February 12, 1896, by Mr. W. S. Townsend.

I also know of a number of specimens taken at Middletown, near Newport, R. I., in winter.—REGINALD HEBER HOWE, JR., *Longwood, Mass.*

The Roadrunner as a Rat-killer.—This forenoon (May 7, 1896), I came suddenly upon a Roadrunner (*Geococcyx californianus*) that had just

finished despatching a woodrat (*Neotoma*). The bird reluctantly withdrew as I came upon the scene, leaving the rat, which I found to be quite dead. A post-mortem disclosed a bad contusion on the side directly over the heart, and another on the spine between the shoulders, while the skull was crushed by a blow behind the ear, although the skin was nowhere broken.—A. W. ANTHONY, *San Diego, Cal.*

The Redheaded Woodpecker in Eastern Massachusetts.—It is so seldom that a Red-headed Woodpecker (*Melanerpes erythrocephalus*) is seen in eastern Massachusetts that its occurrence is worthy of note. On Sunday noon, March 8, 1896, while taking a walk through a grove of mixed elm, maple and pine trees in the section of Boston known as Dorchester, I came across a beautiful bird of this species, lazily climbing about on a partially decayed stump and apparently searching for food. The bird was very tame, allowing me to follow it closely as it flew from tree to tree and to approach to within ten or fifteen yards on several occasions. After watching it for some fifteen minutes and thinking from its tameness and from its partiality to a particular stump that it might be wintering in the locality I quietly withdrew. A thorough search of the woods the next morning failed to discover the bird again and I concluded it was probably a temporary visitor.

On May 8, 1896, while walking early in the morning in Dorchester District, my attention was attracted by the loud calling of a Red-headed Woodpecker. After a short search the bird was located in a clump of tall oak trees and was shot. It proved to be a male in full plumage, and was very fat. This is probably the same bird noticed by me on March 8, 1896, as recorded above, as it was shot within one hundred yards of where it was previously observed.

I have seen this species in Massachusetts only once before, the first time being on May 19, 1878.—FOSTER H. BRACKETT, *Boston, Mass.*

Pyrocephalus rubineus mexicanus in Los Angeles County, Cal.—During recent winters numerous duck-hunters in the San Gabriel River bottom have observed a "fiery red" bird among the willow trees. On Dec. 8, 1895, I secured an adult male which, as I expected, proved to be the Vermillion Flycatcher. On Feb. 8, 1896, I again shot a specimen, an adult female in the same locality. Thus it appears that *Pyrocephalus rubineus mexicanus* is a regular winter visitant to the river bottoms in Southern California west of the Sierra Madre Mountains.—HORACE A. GAYLORD, *Pasadena, Cal.*

Intergradation in Song of *Sturnella magna* and *S. m. neglecta* in Missouri.—In Dr. Coues's 'The Birds of the Northwest,' Mr. Tripp notes that he had never observed any intergrading of the songs of *Sturnella magna* and *S. m. neglecta*. Some seven or eight years ago while creeping on some ducks in Audrain County, Mo., I heard a very pecu-

liar lark song, but was unable to investigate the matter. Later I wrote Mr. Vernon Bailey and Mr. B. H. Dutcher, both of whom had been observing the intergradations of plumage and habits in Kansas of these two birds, and I asked of them if they had observed any birds with a blended voice. Neither had; and Mr. Bailey was kind enough to ask other ornithologists at the Smithsonian Institution concerning the matter. None had noticed any intergrading.

But recently (March 9, 1896) I was in the same region of my former duck hunt and heard distinctly a Western Lark's song. It was fairly typical but too highly pitched. A mile away I heard another that was deeply liquid and gurgling—in fact quite typical of *S. m. neglecta*, but only a fourth of a mile away I heard one whose song was that of *S. magna* except that it had near the middle a rather highly pitched gurgle. It did not have, in its many repetitions, any downward ending as the other two birds had. Neither was the entire song so highly pitched as that of the typical *S. magna*—scores of which were singing around it.

To my mind here was a distinct intergradation—perhaps the result of hybridism. The region was in Audrain County, Mo., about fifteen miles southwest of Mexico, Mo., and about one fourth of a mile north of the divide between the water-sheds of the Missouri and Mississippi Rivers.

I had shot the *S. m. neglecta* once before in this county further eastward.

This is the only region near me where *S. m. neglecta* is found so far as I know, though it comes into Southwest Missouri. I might add that I am well acquainted with the song of *S. m. neglecta*, having heard it in Kansas, Colorado and S. Dakota.—JAMES NEWTON BASKETT, *Mexico, Mo.*

Pinicola enucleator at Worcester, Mass.—A flock of sixteen Pine Grosbeaks, containing a few bright males, was reported in the northern part of this city Jan. 15, 1896. For a little over a month the Grosbeaks were seen in different parts of the city, one or two or a half dozen at a time, feeding upon mountain-ash berries and seeds of maple and Scotch elm. The last seen was on Feb. 21. But few bright males were seen, the largest number being reported on Feb. 19, when a flock of fifteen contained "several brilliant specimens."—HELEN A. BALL, *Worcester, Mass.*

Evening Grosbeak in Southern Wisconsin.—On January 21, 1896, while passing an old, deserted cemetery on the outskirts of Delavan (Wis.), I heard lively chattering among the large 'evergreen' trees within the graveyard and knew at once that it was the note of some bird new to me. On watching closely I soon saw a beautiful male Grosbeak (*Coccothraustes vespertinus*) appear on the outside of the tree, and later a couple more and two or three of the plainer clothed females. There

must have been at least a dozen in the tree. They were seen every day in good numbers up to about the middle of March, and throughout the remaining part of the winter a small flock of ten or a dozen were constant residents of the immediate vicinity of the above mentioned cemetery. This flock was last seen on March 30. It is their first occurrence in this locality to my knowledge, and I find no one who ever remembers seeing the bird here before. Pine Grosbeaks (*Pinicola enucleator*) were also observed in the county during December last.—N. HOLLISTER, *Delavan, Wisc.*

Zonotrichia albicollis and Mniotilta varia at Pasadena, Cal.—On Nov. 21, 1894, while collecting sparrows in a large blackberry patch just inside the western limits of Pasadena I shot an immature female White-throated Sparrow from a flock of *Z. coronata*, thus adding another record for this species from California.

Early in the morning of Oct. 8, 1895, I shot an immature female Black-and-white Warbler in the Arroyo Seco just west of Pasadena. The bird was at the time alone, and apparently as much at home in Southern California as she would have been east of the Rocky Mountains. So far as I can ascertain this is the second record of this species from California.—HORACE A. GAYLORD, *Pasadena, Cal.*

The Wintering of the Towhee at Longwood, Massachusetts.—I am glad to be able to report the following information in regard to the Towhee (*Pipilo erythrophthalmus*) noted December 25, 1895, at Longwood (see Auk, Vol. XIII, p. 178).

Mr. Henry Vose Greenough, who saw the Towhee with me on Christmas Day, reported to me having seen on March 23, 1896, a male Towhee about a brush pile, some one hundred and fifty yards from the spot where we had noted the one in December. On March 24 I went with him to this place and in a neighboring hemlock hedge we found *Pipilo*.

The brush pile is on the edge of an estate, only a few hundred feet from a stable, pig-sty and hen yard, where food and protection from the winter weather were easily accessible. When we started the Towhee on the 24th he flew straight for the hen yard and then being pursued, to another hemlock hedge leading us in a circuit back to the brush pile.

I believe there can be little doubt that this is our Christmas Towhee, which had wintered here, for the following reasons, viz.: Protection and food supply at hand; a male bird, as was the former one; in practically the same locality, and because it is exceedingly unlikely that a single bird would migrate northward fully a month in advance of its fellows.

We have not noted this bird during January and February, though we both have covered the neighboring ground almost daily, because the place is just on the edge of this little patch of woodland and the Towhee evidently never wandered far from his brush pile and the farm yard.

Since the 23d and 24th of March we have noted the Towhee on the following dates,— March 25, 28, April 2, 4, 7, 9 (singing), 10, 12, 13 and 16, when he disappeared.

The occurrence of this Towhee here makes a valid record of the wintering of this species in Massachusetts, and the female that was taken at Bedford, Mass., on January 2, 1896, and the specimen taken at Portland, Conn., would seem to show that this bird can stand the rigors of a New England winter, and that we may look for further records of the wintering of this species in the future.—REGINALD HEBER HOWE, JR., *Longwood, Mass.*

The Nonpareil at Longwood, Massachusetts.—On June 5, 1896, Henry V. Greenough brought me a male Painted Finch (*Passerina ciris*) which he had shot at about 8 A. M. The bird was in perfect plumage, its wings and tail showing apparently no cage wear and its feet in perfect condition.

I examined its stomach which contained white gravel, suggesting cage gravel (although the bird had been seen upon a gravel walk where I found the same kind of gravel), a white worm, a small amount of dark gravel and a few seeds (not canary seed), and the bird was also quite fat. Its testes were very much enlarged.

The bird uttered only a few notes on alighting and when started, like *chit-chit*. He was seen the day before, and although fairly tame at first, became quite wild from being watched.

The probability of course is strongly in favor of this being an escaped cage bird, but at the same time, the weather having been fair and warm for a week, this bird might have strayed from southern climes.—REGINALD HEBER HOWE, JR., *Longwood, Mass.*

Peculiar Traits of Some Scarlet Tanagers.—Scarlet Tanagers (*Piranga erythromelas*) are not common in this vicinity (Ridgewood, N. J.); for many years I saw only two or three during spring migrations. Within the last few years a few pairs have bred in this locality, generally on the outskirts of woods; so I was surprised to see a pair nesting in a Norway spruce, on a branch only about ten feet from the corner of my house, and about the same distance from the ground. In all my ornithological experience I never knew a pair of birds to live and nest so near my house with such secretiveness.

One of my family first saw the birds from an upper window that looked down on the nest. The nest building appeared to be all done by the female. The male bird was seen usually in the morning, apparently inspecting the work or noting its progress, but was seldom seen during the rest of the day. Both birds when approaching their nest alighted near the top of this high tree and descended through the branches to the nest, which was flat, very evenly built, like a cup of basket work, beautifully woven of material resembling the color of the bark of the

tree. Taken with the greenish color of the female, it was a remarkable instance of color illusion; every time I wanted to see the nest, knowing the branch it was on, I had to run my eye along the branch till it met the nest before I could see it; the shallow nest and the greenish female were remarkably inconspicuous. Only the female took part in the duties of incubation. She would remain on the nest even when one passed closely, but if anyone stopped to look at her, she would glide off the nest through the tree in the opposite direction, so quietly as to almost make one doubtful of her presence. The birds became quite accustomed to seeing one of my family sitting at the window close by. I did not go very near the nest for fear of disturbing the birds.

When the young were hatched another peculiarity was noticed, these birds differing much from most birds in the manner of feeding their young. I watched several evenings for an hour or more at a distance from the tree, but could clearly see the nest with my field glass. Still I did not once see the female feed her young. Most birds feed their young often just before sunset, and I think the female Tanager must have known she was watched, for one evening I watched as long as I could see the nest and no mother appeared. I thought some harm must have happened to her, but next morning she was at home. My business did not allow me to watch them much during the day; one afternoon the bright male Tanager put in an appearance in the upper part of the tree, but seeing me he made off without coming near the nest.

Soon the downy backs of the nestlings showed above the rim of the basket house, when the hen seldom brooded them unless it was wet weather. These youngsters were perfectly quiet, never clamoring for food, like so many other nestlings. Before they were big enough to project conspicuously above their flat nest they left it and went higher up the tree. This was on the 3d of July. Their color being greenish, it was very hard to distinguish them in the upper branches where they were secreted and fed by the parents.

A few days before leaving the nest a violent tempest passed over the vicinity; trees were thrown down and scattered over the ground in all directions; many nests of different birds were tossed or knocked out of the trees by wind or hailstones. I thought it impossible for my Tanagers to escape harm, but they were all right after the storm, which showed how the faithful mother must have covered them. The young birds and mother remained about for several weeks, but the male was absent, if his scarlet was still worn.

I took down the deserted nest. It was composed of long fine brown rootlets, fine thin stems of running blackberry, with a little grass and string evenly woven; it was thinly lined with a fine yellowish brown, thread-like fibre, as fine as horsehair. The whole structure can be seen through yet it is strong.

Had I expressed an opinion on the habits of the Scarlet Tanager from that year's observation I should have said the male bird was very shy,

giving as a reason that his conspicuous dress was a target for his enemies; which is the usual way we try to make other people think we know something. So I will now describe the following year's events, which was 1895. A female Scarlet Tanager came and built exactly on the same spot where the previous year's nest was; hence I infer it was the same female. But what of her gay lord, was he the same male? If so he must have undergone a great change of character, for he showed himself about the tree frequently and sang on the next tree very often during the day. But the most remarkable thing of all was, he spied a nest of Chippy Sparrows (*Spizella socialis*) with young ones. To my surprise he kept going to the nest and fed the baby Chippys, much to the disgust of their parents, who kept hovering around with food in their mouths which the little things could not take, after being fed so often by their gorgeous foster father. This was continued for a number of days. When his own precious young burst their shells and required attention he then left the Chippys to their rightful parents, which were now outgrowing their narrow domicile, being duly cared for. Mr. Tanager now paid as faithful attention to his own family, feeding them very frequently and singing his sweet song between feeding and collecting food. Seldom was he away, near sunset, longer than ten or fifteen minutes. So I am at a loss to account for the shyness shown the previous year, unless this was a second husband of the same female Tanager; and then the extraordinary fact of his feeding other birds' young ones is one of the exceptions that make the study of birds a pleasant recreation. — HENRY HALES, *Ridgewood, N. Y.*

The Occurrence in Nebraska of *Vireo flavoviridis*.—A specimen of the Yellow-green Vireo, *Vireo flavoviridis*, shot at Long Pine, Brown County, has just been received by the Curator of the Museum of the University of Nebraska. This is the first one reported in this State. It is a rare Vireo for the entire United States having been reported, as far as the author can learn, from Texas, California, and Canada only.

The specimen was shot and donated by the Rev. J. M. Bates of Long Pine, who has already done a great deal to further the knowledge of our native birds.

This adds one more to Prof. Lawrence Bruner's List of Nebraska Birds, recently published by the Nebraska State Horticultural Society. The total number of species and sub-species for the State is now 418.—ERWIN H. BARBOUR, *University of Nebraska, Lincoln, Nebr.*

***Helminthophila rubricapilla* vs. *Helminthophila ruficapilla*.**—The A. O. U. Committee appear to have ignored their rule "Once a synonym always a synonym," in the case of the Nashville Warbler. The West Indian *Dendroica ruficapilla* was called *Sylvia ruficapilla* by Latham in 1790 (Ind. Orn., II, 540). Wilson applied the same name to the Nashville Warbler in 1811 (Amer. Orn., III, 120). Whether by design or by

inadvertence, the name was altered to *S. rubricapilla* in a later volume of Wilson (Amer. Orn., VI, 1812, 15) and this appears to be the earliest eligible name for the Nashville Warbler. Under the A. O. U. Code. Nos. 645 and 645a of the 'Check-List' should therefore stand as *Helminthophila rubricapilla* (Wils.) and *Helminthophila rubricapilla gutturalis* (Ridgw.).—WALTER FAXON, *Museum of Comparative Zoölogy, Cambridge, Mass.*

Bachman's Warbler (*Helminthophila bachmani*) in Greene County, Arkansas.—Very early on the morning of May 7, 1896, while in the company of Mr. O. C. Poling, I heard among the score of voices a song which was new to me. It suggested a relationship to *Helminthophila pinus*, but it had several more notes to it. Neither was it a Parula song. After a little search we found the singer, a small yellow bird with conspicuous black throat and black crown, perched twelve feet above dry ground on the lower branch of a medium-sized tree surrounded by a heavy growth of blackberry and other bushes. It did not take me long to identify the bird, nor did it take Mr. Poling long to secure it.

Two days afterwards, May 9, we found and secured in the same manner a second male, only a few rods from where we took the first, but circumstances, among them, two very dead hogs, prevented a thorough search for the nests and females in the vicinity. The highly developed testes showed that they were breeding. The black of the throat extends from the chin to the breast. The locality is in the region of the peninsula of Missouri, on Boland Island, on the Arkansas side of the St. Francis River, and therefore in Greene County, Arkansas.—O. WIDMANN, *Old Orchard, Mo.*

Second Occurrence of the Blue-Gray Gnatcatcher in Maine.—On the morning of April 18, 1896, while driving past a farm-yard on Cape Elizabeth, about three miles from Portland, I heard the nasal call-note of a Blue-gray Gnatcatcher (*Poliophtila cærulea*). In another moment I saw the bird fly from an old oak to an orchard close at hand. Here I watched him at my leisure. He was very active, but not at all shy, coming several times within eight or ten feet of me, constantly calling, often singing, and repeatedly, of course, displaying his characteristic form and colors. There was no bird of any kind with him. An hour later, I drove past the farm-yard again, and found him still in the neighborhood, having simply crossed the highway. He was still entirely alone. I drove within a few feet of him, and watched him for several minutes,—until he again flew off into the orchard.

The weather throughout New England was almost summer-like for a week preceding April 18, and to this fact, perhaps, was due the bird's long journey from the usual haunts of his kind.

The Blue-gray Gnatcatcher has not been seen in Maine before in spring, and has been positively identified in the State but once before.¹—
NATHAN CLIFFORD BROWN, *Portland, Me.*

Southern California Bird Notes.—The following notes on birds observed in the vicinity of San Bernardino, Cal., have been kindly furnished me by my friend Mr. R. B. Herron of Ferndale, Cal.

Callipepla californica vallicola + **C. gambeli deserticola** *Stephens.*—Mr. Herron has recently received a fine pair (♂ and ♀) of hybrids between the above two species. They were shot near Hesperia, Cal., about Dec. 20, 1895, out of a flock of seven or eight, presumably the same brood. Mr. Herron some time since took a pair of hybrids in the Colorado Desert which were described by Mr. Henshaw in the Nuttall Bulletin; he also shot a mated pair at Palm Springs, Cal., in the Colorado Desert, of which the male was *deserticola* and the female *vallicola*; these were nesting. The following is a description of the male hybrid: Crown brown as in *deserticola*; neck-feathers with heavy shaft-lines as in *vallicola* but no white dotting; fore part of breast with faint shaft-lines like *deserticola*; pectoral spot very light buff—lighter than in *vallicola*—with faint scalings. Spot on belly small and light brown, feathers with heavy scalings. Sides and flanks as in *deserticola*.

Syrnium occidentale.—My friend, Mr. E. F. Lane of Azusa, Cal., took a fine female in Little Tejunga Cañon, Cal., in June, 1888. Mr. Herron shot a pair near Banning, Cal., in September, 1895. No less than five specimens were taken in 1894 and 1895 in the cañons back of Pasadena, Cal.

Icterus parisorum.—Mr. Herron shot a fine male in Reche Cañon, six miles from San Bernardino, Cal., April 1, 1895.

Pipilo chlorurus.—A number of these birds wintered in the low lands along the Santa Ana River near San Bernardino; specimens were taken in January and February by Mr. H. E. Wilder.

Phainopepla nitens.—A small flock of these birds also passed the winter in the Santa Ana River bottom.—E. C. THURBER, *Alhambra, Cal.*

Merrem's Work.—This is a rare book, which can hardly if at all be found in this country; it is usually quoted at second hand, as in the instance of *Passerella iliaca*, in the new A. O. U. Check-List, where the title is given in German, with the date "1786-87." I handled the Latin edition in London in 1884. The full title and collation are as follows:

1786. MERREM, B.—Avium | rariorum et minus cognitarum | Icones et Descriptiones | collectae | et e Germanicis Latinae factae | a Blasio Merrem, | Ph. D. Phys. et Math. in Reg. Dvisburgensi Acad. P. P. O. | Soc. R. Scient. Gotting. Litterar. Commerc. inuncto. | — | Fasciculus

¹ See Bulletin Nutt. Orn. Club, V, pp. 236-37.

Primvs [Secvndvs]. | — | Lipsiae, | ex bibliopolio Io. Godofr. Mülleri-
ano CIO IOCCCLXXXVI. 1 vol. folio. Title 1 l.; dedication backed by
preface, 1 l., pp. 1-20, 1 l. (title of Fasc. II), 21-45, pll. col'd 1-vi, vii-xii.

The work treats extensively of the following birds: *Cotinga rubra*,
p. 1, pl. 1, fig. 1. *C. cuprea*, p. 5, pl. 1, f. 2. *Gracula nobilis*, p. 7, pl. 2.
G. chrysoptera, p. 10, pl. 3. *Mellisuga coccinea*, p. 14, pl. 4. *Merops
spiza*, p. 16, pl. 5. *Muscicapa ferruginea*, p. 19, pl. 6. *Aquila glaucopsis*,
p. 21, pl. 7. *Lanius atricapillus*, p. 26, pl. 8.—TROGONUM genus, mono-
graph of, in Linnæan style, pp. 28-36, treating of: *Trogon hæmorrhoida-
lis*, *T. curucui*, p. 33 (pl. 9); *T. strigilatus*, *T. ferrugineus*, p. 34; *T.
flammeus*, *T. viridis*, p. 35.—*Fringilla iliaca*, p. 37, pl. 10. *Penelope iacu-
pema*, p. 39, pl. 11. *P. leucolophos*, p. 43, pl. 12.

The work consists of two fasciculi, separately full-titled and probably
issued apart; and the title of Fascicvlvs Secvndvs is literally different
from that of Fascicvlvs Primvs. But both bear the same date, 1786, and
are bound as one volume in the copy examined in the library of the
Zoölogical Society. The pagination and numeration of the plates are con-
tinuous; so that it is not necessary to cite the work by fasciculi. The
first 20 pages and 6 plates belong in Fasc. I., the rest in Fasc. II.—ELLIOTT
COUES, *Washington, D. C.*

Mandt's Inaugural Dissertation.—This is a scarce tract, which I have
never seen cited in full, and which is seldom so cited as to give any satis-
factory idea of what it may be. The following is the title:

Observations in Histo- | riam Naturalem et Ana- | tomiam comparatam
in | itinere Groenlandico | factae. | — | Dissertatio | In auguralis | quam
| consensu et auctoritate | gratiosi medicorum ordinis | in | Universitate
Literaria Berolinensi | ut | summi in medicina et chirurgia | honores rite
sibi concedantur | die XXII. M. Iulii A. MDCCCXXII | H. L. Q. S. |
publice defendet | auctor | Martinus Guilelmus Mandt | Beyenburgensis |
— | [etc., 4 lines.] | — | Formis Brueschckianis. 1 vol., sm. 8vo., 4 prel. ll.,
pp. 1-40.

A list of birds occupies pp. 3, 4; and on p. 30 is described *Uria mandtii*,
Licht., sp. n.—ELLIOTT COUES, *Washington, D. C.*

Correction.—In the Auk, Vol. XIII, No. 2, for April, page 176, under
'Abnormal Plumage in a Pine Grosbeak,' "its width having decreased .20
of an inch" should read "its width having decreased to .20 of an inch."
On page 178, the paragraph on the Winter Wren, under 'Three Winter
Notes from Longwood, Massachusetts,' "and on the 25th shot, I think,
the same bird" should read "and on the 25th of December shot, I think
the same bird."—REGINALD HEBER HOWE, JR., *Longwood, Mass.*

NOTES AND NEWS.

THE TEXT relating to Plate III, in the present number of 'The Auk,' will be found in the January number of this volume (XIII, pp. 25, 26).

DR. JUAN GUNDLACH, an Honorary Member of the American Ornithologists' Union, died in Havana, Cuba, March 14, 1896, 'at the age of 85 years. Dr. Gundlach was born at Marburg, Germany, in 1811, where he was educated, and in 1839 went to Cuba, where he resided during the remainder of his life. For nearly fifty years he was a recognized authority on the ornithology of Cuba. Some of his earlier papers appeared in the Boston Journal of Natural History (1857) and the Annals of the Lyceum of Natural History of New York (1858), in which he described various new species of Cuban birds. His principal contributions to Cuban ornithology, entitled 'Beiträge zur Ornithologie Cubas,' and 'Neue Beiträge zur Ornithologie Cubas, nach eignen 30 jährigen Beobachtungen zusammengestellt,' were published in the 'Journal für Ornithologie' (the first, 1854, pp. lxxvii-lxxxvii, 1855, pp. 465-480, 1856, pp. 1-16, 97-112, 337-352, 417-432, 1857, pp. 225-242 [see also, 1859, pp. 294-299, 347-351]; and the second, 1871, pp. 265-295, 353-378, 1872, pp. 401-432, 1874, pp. 113-166, 286-303, 1875, pp. 293-340, 353-407). He also published 'Beitrag zur Ornithologie der Insel Portorico', in the same journal (1874, pp. 304-315), and 'Neue Beiträge zur Ornithologie der Insel Portorico' (1878, pp. 157-194). He also published in Spanish an elaborate paper on the birds of Porto Rico, under the title 'Apuntes para la Fauna Puerto-Riqueña' (Anal. de la Soc. Esp. de Hist. Nat. VII, 1878, Aves, pp. 141-422), and papers on the mammals of Cuba and Porto Rico, besides various minor papers on the ornithology of these islands.

His researches and writings, however, were not restricted to mammals and birds, his entomological publications being quite extensive, and he published also on other branches of natural history.

Dr. Gundlach was a friend and correspondent of Baird, Brewer, and Lawrence, and was known through correspondence or personally to many of the younger American ornithologists. He was a naturalist in the fullest sense of the word, and retained his enthusiasm for his favorite pursuits to the last.¹ His extensive collections in all departments of Cuban natural history he deposited sometime since in the Havana Institute.

CLARENCE A. SMITH, an Associate Member of the American Ornithologists' Union, died in New York City, May 6, 1896, at the age of twenty-two years. Though he had published but little on ornithology he was a keen observer and an expert collector, and was possessed of an extended

¹ See Auk, IX, 1892, pp. 471-473. 'In Cuba with Dr Gundlach,' by Charles B. Cory.

knowledge of birds derived from his field experiences in various parts of the United States and Mexico. His valuable collection of exceptionally well-prepared bird skins and eggs has been presented to the American Museum of Natural History.

THROUGH the enterprise of Mr. Charles B. Cory, Palm Beach, Florida, has a museum of Natural History, devoted especially to the fauna of Florida. At the suggestion of Mr. H. M. Flagler, the erection of a building for this purpose was begun some two years ago, and was soon ready for occupation, the building being a wooden structure, 40 by 100 feet, and two stories in height. It already contains all of the Florida mammals but two, and a nearly complete collection of the birds of Florida, mounted after approved modern methods. It includes ten large groups, devoted to the Panther, Alligators and Crocodiles, a Heron rookery, and various other characteristic Florida birds. While the Museum is devoted primarily to the Vertebrate Zoölogy of Florida it will also include the insects and shells, the intention being to bring together a complete representation of the animal life of Florida. A prominent feature is a collection of the implements and costumes of the present Seminole Indians. It is proposed to add later an Aquarium, devoted mainly to the fresh-water fishes of the State. At present the Museum is open free to the public during certain hours each day, but when completed will be free only on certain days, a small admittance fee being charged on other days.

WE have received the prospectus of a new monthly illustrated ornithological journal, 'The Osprey', published by the Osprey Company, Galesburg, Ill., under the editorship of Walter A. Johnson, Dr. A. C. Murchison and Chester Barlow.

'THE NIDIOLOGIST' has again changed its place of publication, having returned to its former home, Alameda, California, after a short but successful career in New York City. We trust the change will not detract from its future usefulness, or diminish the interest of its pages.

BY A recent Act of Congress the name of the Division of Ornithology and Mammalogy of the United States Department of Agriculture, under the direction of Dr. C. Hart Merriam, as Chief of the Division, has been changed to the much more descriptive and appropriate title of 'Biological Survey,' the change of name to go into effect July 1, 1896. It is gratifying to have the character of the important work Dr. Merriam has for some years been conducting so successfully recognized officially by the Congress.

RESPECTING Mr. D. G. Elliot's expedition to Africa, mentioned in a former number of 'The Auk' (XIII, p. 196) we quote the following from the June issue of 'The National Geographic Magazine' (VII, p. 219);

"Consul Masterson reports that Prof. D. G. Elliot and Messrs. Akeley and Dodson arrived at Aden, April 14, where they procured 70 Somalis, 80 camels, and 20 horses and mules. A week later they crossed to Berbera, on the Somali coast. An absence of 10 months is planned, during which they will cross Somali into Gallaland and pass to the south of the Juba River. The main object of the journey is the collection of mammals, but no effort will be spared to make the zoölogical collection varied and complete."

THE EDITOR of 'Natural Science,' in commenting (Nat. Sci., April, 1896, p. 218) on the discussion on zoölogical nomenclature held by the Zoölogical Society of London at its meeting of March 3 last, observes: "The discussion turned chiefly upon the following questions:—First, may the same generic names ever be used for both animals and plants? Secondly, may the same term be used for the generic and trivial name of a species, as in the well-known instance of *Scomber scomber*? Thirdly, are we to adopt as our starting-point the tenth edition of Linné's *Systema Naturæ* in preference to the twelfth edition? These questions are answered in the affirmative by the German code, and in the negative by the original Stricklandian. We do not propose to discuss them here: it is natural that there should still be found, especially among the older zoologists of this country, many to support the old-established British practices; in this, as in all other matters of nomenclature, convenience, not principle, is concerned, and it cannot be gainsaid that the general usage of zoologists, at all events in other parts of the world, becomes daily more and more in harmony with the rules adopted by the German Society."

He advocates the preparation of a complete and correct list of the names of all animal species, fossil as well as recent, and adds, "then it would at all events be perfectly possible for the zoologists of the world to accept that list, and to say, 'Whether these names be right or wrong according to this or that code of nomenclature, we do not know and we do not care; but we bind ourselves to accept them in their entirety, and we hereby declare that the date when this list was closed for the press shall henceforward be the date adopted as the starting-point for our nomenclature.'"

"We have" he continues, "put this proposition in a broad manner; there are, of course, numerous minor points to be taken into consideration. The preparation of a mere list would be an enormous undertaking: we learn from Dr. David Sharp and the workers on the *Zoological Record* that there are 386,000 recent species; no one has reckoned the number of extinct species. Some such work as the 'Index generum et specierum animalium,' now being compiled with a minimum of support and under constant difficulties, by Mr. Charles Davies Sherborn, must form the basis of any such synopsis as that here proposed. The first duty of naturalists is to help Mr. Sherborn, who works at the British

Museum under a Committee of the British Association. We also have to consider what is to be done when our list is completed. First of all, it must constantly be kept up to date. It seems to us that some restriction will have to be laid upon the place and manner of publication of new specific names, and we would suggest that, when the time comes, no specific name should be recognized unless it be entered by the author at some central office, together with a properly published copy of the work in which the description appears. The name would then be checked, dated, and placed at once in the Index."

This is very good, except the suggestion that "some restriction will have to be laid upon the place and manner of publication of new specific names," etc., which we consider both unwise and impracticable; for an author publishing in well-known scientific journals and the proceedings, etc., of scientific societies should not, and indeed could not, be deprived of recognition simply because, through accident or carelessness, or even disinclination, he should fail duly to report at "some central office," of record, without overthrowing the hitherto universally recognized rules regarding what constitutes proper publication. It is enough that he conform to these, although for his own interest, he might well send copies of his publications to designated offices of record.

In the May number of the same publication (*Nat. Sci.*, May, 1896, p. 302), the editor has the following judicious comment, in reply to a correspondent, respecting the 'Law of Priority.' "Obviously," he says, "some such law is a necessity, if we are to avoid the multiplication of synonyms or to have any attempt at a world-wide set of names. The difficulties in the application of the law are of two kinds. First, is it to be retrospective? and, if not, where is the line to be drawn, and who is to draw it? Secondly, when authors have published unintelligible or doubtful descriptions, who is to be the judge? These matters cannot be left to the individual caprice of naturalists, even so distinguished as Mr. Cunningham. It is for this reason that we made the proposal published in our last number. We say,—let the Law of Priority work! in most cases it will answer. Then let the doubtful cases be adjudicated on by specialists appointed *ad hoc*, and let their decision be accepted. Fixity of nomenclature of course is not anticipated, for that could be the result only of the stagnation of systematic zoology. Nevertheless, the acceptance of our proposal would do away with the changeableness that depends on mere whim, or on literature rather than on fact. We realize, indeed we have insisted, that the full carrying out of our ideas cannot be yet; the index to all published names must first be completed."

CORRESPONDENTS may be interested to know that the editor of 'The Auk' will be absent on a European tour till about September 1. Letters concerning 'The Auk' may be addressed to the Assistant Editor, Mr. Frank M. Chapman.



NELSON'S SPARROW.

ACADIAN SPARROW.